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OFFICIAL ORGAN OF THE NORTHWEST FRUIT GROWERS ASSOCIATION

VOLUME FIVE

NUMBER FIVE

10 CENTS
A COPY DOLLAR A YEAR

BETTER FRUIT

NOVEMBER 1910



A BUNCH OF ROSE PERU

PUBLISHED BY

BETTER FRUIT PUBLISHING COMPANY

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And Provide an Annuity for Old Age

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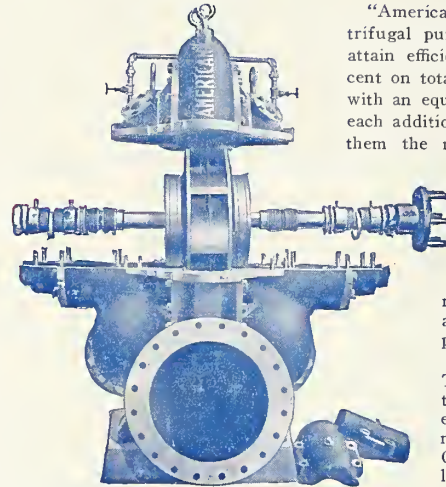
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NORTHWESTERN FRUIT EXCHANGE

The following is an extract from an article appearing in the Cashmere (Washington) Valley Record of Friday, October 21, 1910. The Northwestern Fruit Exchange did not inspire this testimonial which is entirely voluntary:

"The Cashmere Fruit Growers' Union is also doing a thriving business and their output is handled by the Northwestern Fruit Exchange. In speaking of the season's business, Mr. J. L. Padfield, manager of the union, says:

"We have had a very nice business thus far this season, and have shipped sixty cars of fruit. We feel especially well pleased with the manner in which the Exchange is handling our output. They furnish daily market reports, reporting sales of cars as well as market conditions. All our fruit is sold f.o.b. and we know what our fruit is selling for. * * * Full returns have been reaching us in from two to three weeks and same paid to the growers at once. The system of distribution of the Exchange is most excellent. * * * Our business belongs to the Cashmere fruit growers, and we are anxious that they understand how their fruit is being handled.'"

The Northwestern Fruit Exchange is virtually a federation of a number of prominent local fruit growers' associations in Oregon, Washington and Idaho. It **stands for the principle of association**; of organized **control** of the industry by **the fruit growers themselves**.

The policies of the Exchange, and its management, are **in the hands** of fruit growers, and every local association becoming a member of the Northwestern Fruit Exchange is invited to take an active part in helping to shape its policies, to better the conditions of the industry, and to assist in lifting a great enterprise out of a disorganized, competitive condition and place it on a stable, organized, business basis.

Do **YOU** think such a thing is **needed**?

If needed today, it will be needed a **thousand times more** five years from now.

The Exchange has **just begun**; its progress is gratifying to everybody who has helped to start it.

Will **YOU** help to carry it on to final success?

THE EXCHANGE HAS PUBLISHED A BOOKLET WHICH TELLS ALL ABOUT ITS ORGANIZATION, ITS ACCOMPLISHMENTS, ITS SYSTEM AND ITS PURPOSE. IT WOULD GLADLY SEND IT TO YOU IF YOU WILL WRITE

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908, 910, 911, 912 Spalding Building

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The Modern Garden of the Hesperides

“Within the Shadow of Mighty Mount Hood”

“Where the rain and sunshine meet.” There grow the finest and most delicious apples in all the wide, wide world. Every apple picked by hand and packed in the most scientific manner under the direct and personal inspection of the Board of Directors of the

Hood River Apple Growers' Union

We take pleasure in advising the trade that for the third consecutive time practically the entire crop of this noted valley has been purchased by us.

The early fall varieties are now rolling and will be succeeded within a week or two by the noble NEWTOWN PIPPIN, the delicious SPITZENBERG, the magnificent GOLDEN ORTLEY and such other varieties as grow to perfection only in the Hood River Valley.

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The Most Extensive Operators in High Class Fruits in the World

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Wholesale Merchants Fancy Boxed Apples

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We have modern cold storage facilities essential for the handling of your products

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Carlot Distributors

Prunes, Apples, Pears, Peaches

We are represented in all large markets
throughout the United States

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317 Washington Street, New York

Largest Handlers of Pacific Coast Fruits in the East

REPRESENTING THE FOREMOST WESTERN SHIPPING COMPANIES AND ASSOCIATIONS
ON THE NEW YORK MARKET

Operating in All Producing Sections

Reliable

Experienced

Prompt

EXPORT APPLES

Can be held in Boston and forwarded to suit European market conditions from

STORAGE IN BOSTON

With better results than have been heretofore obtained

AMPLE STEAMSHIP SAILINGS SPACE ALWAYS AVAILABLE SWITCHING TO WAREHOUSE FREE
NO COST FOR INSURANCE LIBERAL ADVANCES

BOSTON TERMINAL REFRIGERATING COMPANY

CHAS. L. CASE, Manager

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Growers and Shippers of

**YAKIMA VALLEY FRUITS
AND PRODUCE**Specialties: Apples, Peaches,
Pears and Cantaloupes

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*Correspondence Solicited***RYAN & VIRDEN CO.**

BUTTE, MONTANA

*Branch Houses:*Livingstone, Billings, Sheridan,
Montana; Lewiston, Idaho**Wholesale Fruit and Produce**WE HAVE MODERN COLD STORAGE FACILITIES
ESSENTIAL FOR HANDLING YOUR PRODUCTS*A strong house that gives reliable market
reports and prompt cash returns*

The Old Reliable

BELL & CO.

Incorporated

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**FRUITS AND
PRODUCE**112-114 Front Street
PORTLAND, OREGON**PORTLAND
BROKERAGE CO.**

Consignments solicited with quick returns

**FRUITS, PRODUCE
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TELEPHONE A 5758

206 Stark St., Portland, Oregon
Between Front and First Streets

FAMOUS HOOD RIVER

APPLESSpitzenbergs, Newtowns, Jonathans,
Arkansas Blacks, Ortleys, Baldwins,
Winesaps, R. C. Pippins, Ben Davis,
M. B. Twigs

Look Good, Taste Better, Sell Best

*Grade and Pack Guaranteed***Apple Growers' Union**
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MARKET YOUR**FRUIT**

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SOLICIT YOUR CONSIGNMENTS

Top Prices and Prompt Returns
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**APPLE
SPECIALISTS**We have Apples in our store
every day in the year.**SGOBEL & DAY***Established 1869*

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Strictly commission house. Specialists in apples,
pears and prunes. Exporters of Newtown Pippins
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receiving our personal attention**E. P. Stacy & Sons**

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FRUITS**Branch Offices at Carrington, N. D.
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Fruit and Fancy Vegetable Firm in the South**IMPORTERS, RECEIVERS, JOBBERS AND
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Correspondence solicited

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HORTICULTURAL
UNION**

North Yakima, Washington

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Apples, Pears, Peaches, Cherries,
Plums, Prunes, Apricots, Grapes
and CantaloupesMixed carloads start about
July 20. Straight carloads in
season. Our fruit is the very
best grade; pack guaranteed

We use Revised Economy Code

**Rogue River Fruit and
Produce Association**

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Main Office, Medford, Oregon

We will distribute the entire output of the
Rogue River Valley—The world's most fam-
ous pears—Our Spitzenbergs won first prize
in 1909—We use the Revised Economy Code*Loading Stations*Ashland, Medford, Grants Pass, Eagle Point,
Gold Hill, Central Point, Talent, Woodville,
Phoenix, Voorhies, Merlin and Jacksonville.**Grinnell, Collins & Co.***(Incorporated)*

Minneapolis, Minnesota

**WHOLESALE FRUIT
AND PRODUCE**

We want the best pack and quality

Apples Pears Peaches*We have modern cold storage facilities*
CORRESPONDENCE SOLICITED*We make a specialty of***Western Fruits****APPLES, PEACHES
PLUMS AND PEARS***We have our representative in field***The Callender-Vanderhoof Co.**
113 N. 6th St. Minneapolis, Minn.**Mark Levy & Co.**COMMISSION
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Commission**LAUX & APPEL**

All Fruits in Season

STORAGE FOR
FIFTY CARSThe Acknowledged Fancy
Fruit House of New OrleansThe Largest Wholesale Exclusive
Fruit Concern in the South**John B. Cancelmo**

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BOX APPLES**

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MINNEAPOLIS, MINNESOTA**BOX APPLES**

We handle over 3,000 cars annually and need heavier supplies

Associate Houses: Gamble-Robinson Co., Oelwein, Iowa; Gamble-Robinson Fruit & Produce Co., Pipestone, Minnesota; Gamble-Robinson Fruit & Produce Co., Mankato, Minnesota; Gamble-Robinson Fruit Co., Miles City, Montana; Gamble-Robinson Fruit Co., Aberdeen, South Dakota; Gamble-Robinson Company, Rochester, Minnesota; Gamble-Robinson Fruit Co., St. Paul, Minnesota.

REFERENCES: SECURITY NATIONAL BANK, THE PACKER, DUN AND BRADSTREET.

*Ship Your APPLES and PEARS to the Purely Commission and Absolutely Reliable House***W. DENNIS & SONS**

LIMITED

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LONDON*and*CUMBERLAND STREET
LIVERPOOL

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Capital and Surplus \$75,000.00

H. J. BIGALOW, Secretary and Treasurer

Established 1883

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All Commercial Agencies
The Produce Reporter Company
Any reliable house in our line in the
United States

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The California Growers' Exchange, Los Angeles, Cal.
The California Fruit Distributors.
The Earl Fruit Company.
The Pioneer Fruit Company.
The Producers' Fruit Company, Sacramento, Cal.
The Stewart Fruit Company, San Francisco, Cal.
The Atwood Grape Fruit Company, Manavista, Fla.
The Georgia Fruit Exchange, Atlanta, Ga.
The Florida Citrus Exchange, Tampa, Fla.
Crutehfield & Woolfolk, Pittsburg and Chicago.
Redlands Golden Orange Association, Redlands, Cal.*Commission Merchants**Jobbers and Wholesalers*

Cleveland, Ohio

APPLES**Plums Prunes Pears Oranges Lemons**

We have the largest and best trade in the Cleveland territory; our facilities are unsurpassed

We have had years of experience in handling box apples and fancy fruits

WE SOLICIT YOUR CORRESPONDENCE AND SHIPMENTS

D. CROSSLEY & SONS

Established 1878

APPLES FOR EXPORT

California, Oregon, Washington, Idaho and Florida fruits. Apples handled in all European markets. Checks mailed from our New York office same day apples are sold on the other side. We are not agents; we **sell apples**. We make a specialty of handling **APPLES, PEARS AND PRUNES** on the New York and foreign markets. Correspondence solicited.

200 TO 204 FRANKLIN STREET, NEW YORK

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NEW YORK

BOSTON

GLASGOW

APPLES

WE WANT THE BEST
THE MARKET PROVIDES

FLIEGLER & CO.

ST. PAUL, MINNESOTA

MEMBERS ST. PAUL BOARD OF TRADE

GIVE US A TRIAL

Alpine Orchard Tracts

Are selling fast. Our prices, terms and location are right. We have a booklet with handsome cover giving you information about these, also a catechism of questions and answers concerning Apple Orchard Lands, and a pamphlet showing many ways of making money while the trees are coming into bearing. If you are a prospective customer we would be pleased to send these to you.

OREGON APPLE ORCHARDS CO.

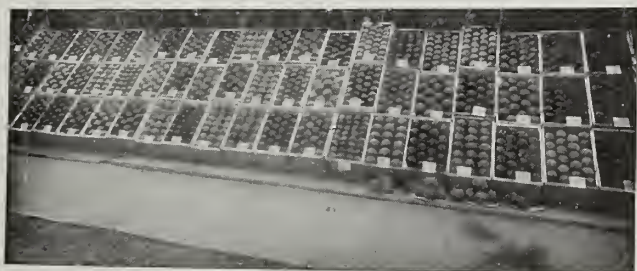
804-5 Lewis Building

Portland, Oregon

\$1000

PER ACRE NET

\$1000



MOSIER APPLES AT HOOD RIVER FAIR

This is not an unusual profit for producing apple orchards in Oregon. It is a perfectly possible profit for any man of persistence and common sense who will select land in a proven apple district in Oregon and develop it properly. If you are at all interested in fruit growing we advise you to investigate the Mosier Valley. This valley adjoins the famous Hood River Valley, and is properly a part of it, so far as the character of the soil and the quality of the fruit produced is concerned. We claim that the apples produced in Mosier Valley are second to none and that there is no section anywhere which offers the fruit grower a greater opportunity. Land in the Mosier Valley can be obtained for very low prices, and can be cleared with comparatively little effort. These lands can be made to increase in value from 100 to 500 per cent in two years by clearing and planting trees. We invite the most careful and critical inspection of Mosier Valley, confident of the outcome. *For full particulars about this Valley address*

SECRETARY MOSIER VALLEY COMMERCIAL CLUB

MOSIER, OREGON

MOSIER

OREGON

Six Miles From Hood River

HAS:

The best of apples and other fruit;
The best climate;
The best soil;
The best record of prices for apples;
The best scenery in Oregon;
The best fruit growers' union;
The best market conditions;
The **LOWEST PRICES** for **PROVEN** fruit land,
And a **RELIABLE REAL ESTATE DEALER**,

NO TROUBLE TO ANSWER QUESTIONS **D. D. HAIL, Mosier, Oregon**

WHITE SALMON VALLEY

NON-IRRIGATED

Having direct water TRANSPORTATION, after the Panama Canal is built, it is estimated that White Salmon and Hood River Newtowns can be put on the English market for 35 cents a box.

American Consulate,
Belfast, Ireland, March 15, 1910.
Editor Better Fruit:
I take pleasure in enclosing you a copy of
a report made to W. K. Newell on "The
Apple and Pear Markets of Europe," which
may be of some special interest to you.
Very truly yours,
Henry B. Miller, Consul.

The following quotation is taken from the above mentioned report:

"This year all the apples from irrigated districts have proved very unsatisfactory, especially those arriving after January 1, as from one-quarter to one-third are more or less decayed.

"I have seen large, fine looking Winesaps, Rome Beauties and other equally hardy varieties from irrigated districts arriving in a bad state of decay, and dealers have entered a strong complaint.

"I find that apples from non-irrigated districts coming into the markets after the first of the year uniformly bring the best prices."

DEVELOPMENT LEAGUE, WHITE SALMON, WASHINGTON

White Salmon Orchard Lands

The "White Salmon" Valley offers as good an investment for the man with little means as the man of wealth. Fortunately this district is not bought up by speculators; small tracts of ten acres or more can be bought on easy terms direct of us, we acting as agents for the original homesteaders in many cases. Below we quote a few special tracts that are bargains. Our complete list sent on request.

580—10 ACRES, 2 miles out; flowing spring water. Cheap at \$125 an acre. Cheapest small tract, so near town, on the market.

550—20 ACRES, with 12½ acres under plow, 10 acres in young Spitzenberg and Yellow Newtown apples, 3 acres in bearing strawberries; house, stable and well; red shot soil. Only two miles from White Salmon. Price \$325 an acre; one-third cash, balance 3 years, 8 per cent.

583—80 ACRES, all good orchard land, excepting 3 acres which is low, making good hay land; elevation 1,600 feet; deep red shot soil; 2 acres in cultivation; 4-room plastered, frame house, which cost \$400; log barn; 12 acres brush land, which is easily cleared; all year spring. A first-class county road suitable for automobile use passes within ¼ mile of this tract; only 8 miles to the Columbia River and North Bank Railway; 1½ miles to Snowden post office; fine view of Mount Adams. Price for 30 days only, \$47.50 an acre, on easy terms.

553—10-ACRE TRACT 7 miles from White Salmon, on county road; red shot soil, light fir timber; near the White Salmon Orchard Company's large bearing orchard. For an immediate sale, price only \$125 an acre; half cash, balance 3 years, 8 per cent.

516—30 ACRES, 1 mile from Husum, 6 from White Salmon, ½ mile to White Salmon River; on county road; all but 4 acres nearly level; two all-year springs; good soil. Mail and stage each day except Sunday between White Salmon, Husum and Trout Lake. Land on three sides cleared and set to orchards. This piece has been tied up until recently, but can be bought, if taken soon, at \$140 an acre, on easy terms.

600—80 ACRES, 8 miles from White Salmon, 2½ miles from Husum; fine view of Mount Adams and Mount Hood; soil red shot, spring water the entire year; over 50 acres orchard land, balance pasture. Present price only \$37.50 per acre; one-third cash, balance 3 years, 8 per cent.

DAY BROTHERS

WHITE SALMON REALTY CO.

WHITE SALMON, WASHINGTON

SEE THE Upper Hood River Valley

The best of land. Plenty of cheap water. Good transportation facilities.

Prices range from \$100 to \$200 per acre for unimproved land up to \$500 per acre for acreage set to trees.

Unexcelled for

Apples and Strawberries

I handle these lands



W. H. MARSHALL

Trout Creek Station on Mt. Hood Railway is on my place

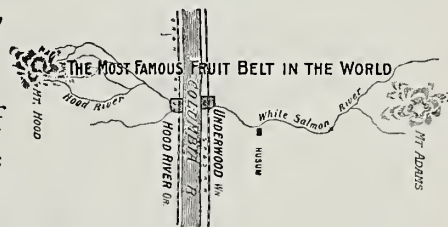
Postoffice: DEE, OREGON

UNDERWOOD

The Gateway to the Famous White Salmon Valley

If you want a strictly first-class location for growing high-grade fruit, close to the river and railroad, within sight of the town of Hood River, with the best of everything in the way of shipping and social advantages, call on or write

W. F. CASH, UNDERWOOD, WASHINGTON



Own an Irrigated Orchard

Only \$12.50 per Month

ARCADIA

Is located right in the heart of the fruit belt—twenty-two miles north of Spokane. Best soil for raising commercial apples. Land irrigated by gravity. FREE WATER. No maintenance charge. We plant, cultivate and take entire charge of your orchard for four years—so you can stay where you are, and when your orchard is in full bearing you will make big profits. Get our booklet—tells all about Arcadia.

ARCADIA ORCHARDS CO.

HYDE BLOCK, SPOKANE, WASHINGTON

Gentlemen: Please send me your Booklet "A."

Name

Address

Business Opportunities in Hood River

There are many splendid openings here for capital in mercantile lines. Good locations will be available by December 1st. Now is the time to investigate good paying business chances.

Bearing orchards are always safe and sure interest makers. We have some special listings that are attractive to the man with money. Write us for full information.

J. H. HEILBRONNER & CO.

THE RELIABLE DEALERS

The Davidson Building

HOOD RIVER, OREGON

HOOD RIVER APPLE LANDS

Pay Big Dividends—Values Will Double in Three Years

WRITE FOR COMPLETE LIST OF PROPERTIES

20 ACRES, 7 miles southwest of Hood River; red shot soil, good drainage; close to school and store; 4 acres Newtowns and Spitzenbergs, 1 year old; 12 acres slashed and burned; balance light timber; spring water; good location. A bargain at \$5,000; \$2,000 cash will handle it.

10 ACRES, 3 miles southwest of Hood River; all set to Newtowns and Spitzenbergs, in good condition; volcanic ash soil, good drainage; on main county road. This is a snap at \$7,000; \$3,000 cash will handle it.

20 ACRES, 9 acres set to commercial orchard, mostly three-year-old trees; 3 acres young strawberries; 5 acres partly cleared, balance in meadow; water stock; small house; near school, store and railway station. Price \$10,000; \$4,600 cash.

75 ACRES, beautiful modern home, 2½ miles from town; 30 acres under cultivation; 16 acres in orchard in prime condition, part full bearing; 14 acres in meadow. Place will show profit this year of over \$5,000 on the crop. Team and all implements included. Price \$35,000.

30 ACRES, best red shot soil, scientifically planted to standard commercial orchard, some full bearing; living stream of water, close in; genuine bargain. \$23,000; very good terms.

15 ACRES, all planted to Newtowns and Spitzenbergs, 1 to 4 years old, save ½ acre in meadow; close to town; red shot soil. Price \$11,000; \$4,000 cash.

20 ACRES, unimproved, 6 miles south of Hood River; good drainage, excellent location; all under ditch and A1 orchard land. Good buy at \$3,500; \$1,250 cash, balance 3 or 5 years.

10 ACRES, near school, store and railway station, on main road; good soil, good drainage; all set to 2-year-old Newtowns and Spitzenbergs; excellent condition; beautiful building site. Price \$5,500; \$1,500 will handle it.

20 ACRES, partly improved; red shot soil, high and slightly; perfect drainage. This tract lies fine for orchard; beautiful building spot. Genuine bargain at \$350 per acre; \$2,000 cash.

DEVLIN & FIREBAUGH

THE LEADING DEALERS

Swetland Building, Portland, Oregon

Hotel Oregon Building, Hood River, Oregon

BETTER FRUIT

A MONTHLY ILLUSTRATED MAGAZINE PUBLISHED IN THE INTEREST
OF MODERN AND PROGRESSIVE FRUIT GROWING AND MARKETING

APPLE SPECULATION FROM A BUYER'S VIEWPOINT

ADDRESS BY EMORY C. COOK, OF BALTIMORE, MARYLAND, BEFORE INTERNATIONAL APPLE SHIPPERS CONVENTION, NIAGARA FALLS

IF I were a preacher and asked to bring some message to this convention, and if allowed to choose my own subject, I should take for that text the following: "The way of the transgressor is hard, but the foolishness of the apple speculator is past finding out." Or, to change the figure of speech, "Conservatism is a mark of wisdom, while radical optimism in the field of speculative adventure is a danger signal that the wise will heed and the prudent avoid." But as I am neither a preacher nor a public speaker, nor the chooser of my subject, I shall take the topic assigned me and undertake to apply the lessons experience has taught me, but must claim your indulgence while I read it to you from manuscript, doubting that I have the ability to address you otherwise.

I shall address you as one of you, for to a modest extent I am a buyer and a speculator. I shall also, I trust, be able to bring to you some lessons I have learned in that forum of education—contact with that element which is your master and mine, and who in the last analysis fixes the price of all commodities—the consuming public. My experience as a buyer and speculator, and also as a receiver and distributor, furnished your committee the only excuse they could have had in inviting me to address you, and I presume the only apology they can offer in extenuation.

Along the lines of business endeavor are periods when it is wise to pause a moment and look backward so that we may the more clearly see what the future holds for us, and whether or not we are safe in following our own footprints, or whether it would not be wiser to mark out new paths in our forward movements.

My conception of the uses of these conventions is that they furnish such a period by bringing together men from the North, South, East and West to rub elbows and to harmoniously discuss past, present and future problems that affect our line of business—questions that vitally concern all here present, and not us alone, but our families and the communities in which we do business; the communities, because the measure of success achieved by its business men is the measure of its prosperity and advance. Therefore, a glimpse into the past is appropriate and timely.

The sum of human wisdom has all been drawn from the past. Without a knowledge of what has gone before him,

man gropes in the dark and his efforts are merely experiments, and lack stability and that degree of intelligence that comes only of and by thoughtful experience.

Our logic is right or wrong in just such proportion as we measure it by the past, after drawing thoughtful deductions from conditions that change only in detail, but whose principles are as

cate sound business ideas and sane methods of procedure, in what is at best, a most hazardous business.

Your executive committee has invited me to address you along the lines of a topic they have chosen, viz: "Lessons to be Derived," confining myself to the season of 1909-10, and particularly, as they apply to the barreled apple sections of this country and Canada.

They have been liberal enough to allow me twenty minutes to bring to your attention lessons that it would take twenty years to detail and quite as long to efface. They have asked me to speak plainly, and to give liberal credit where credit is due. I shall speak plainly, but I shall be very sparing of my words of commendation, for so far as last season's efforts were concerned, I can see little to commend, unless it is the high class of courage you have manifested and the grit you have expended in bearing losses that were incurred in the very face of the logic that confronted us at the beginning of last season's business; we smiled at logic, and only remembered the profits that a kind Providence had loaned us the year before. The jingle of the dollars in our pockets made us deaf to logic and blind to surrounding conditions. We started with a wrong idea of value, and it is to be hoped we absorbed the lessons that we paid so dearly for as we went along. We now have a liberal education as to what real values were for last year's crop—it is history and an unpleasant memory, or nightmare, according to how largely we operated; but apple men have short memories for losses and long ones for gains—this is proverbial, otherwise, we would be deserving of greater sympathy.

The first and most potent lesson is furnished, or could be furnished, from our own counting rooms—how lean or how fat is your bank account because of your apple operations of the past year? Lest I be accused of bringing a skeleton into this convention, I desist from pressing this question.

The convention in 1909, by the earnest efforts of its officers, brought before us an array of figures as to crop conditions that later was proven to have been remarkably correct. These estimates were on a basis of 100 to 125 per cent of the 1908 crop, spotted as to territory, many sections showing quality far below the average, and we all know how poor it was here in this state.

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unyielding as adamant and as unbending as steel; you may wrap these principles for a time, or displace them occasionally, but they will come back at you and overwhelm you by their strength and weight.

A sailor who would launch his craft on an unknown sea, without chart or compass to guide him, would very soon pile his vessel on the rocks, unless a kind Providence extended a helping hand. We might admire the courage of such a mariner, but we would have little respect for his judgment.

You and I see all along the way frequented by the apple speculator just such wrecks, and each year adds new disasters.

The main and great purpose of this association, as I take it, is to guard men from these disasters by teaching them conservatism; to mark out the reefs and shoals, and chart the coasts so plainly as to guard against the folly of over-speculation and wild adventure; to incul-

In 1908 the crop had been profitably marketed, the buying basis having been from \$1.50 at the start to \$2.25 at the finish, with an average price well under \$2. The crop had been an excellent one as to quality, ample in its dimensions, and we had a consuming demand of enormous proportions; this was brought about by the conservative prices paid for fruit in the gathering season. A public taste was thus created for the fruit, which lasted, as it always will, if encouraged by moderate prices, the season through.

The dealers that year, smarting under the severe losses of the preceding season, were sane in their methods and regulated their buying prices by what consumers (not speculators) would pay for the fruit, and this alone is the true measure of value.

The purchasing power of the dealers (or many of them) was at such a low ebb that conservatism was forced upon them, and hence this healthy condition prevailed throughout the apple-producing sections. Fruit, that under other circumstances would have gone into storage, went to the markets and was consumed.

The autumn was a warm one, and cold weather was postponed to an unusually late date. This caused the fruit in common storage to show ripeness, and as a result, it went to market early; and because the great American people had been given a chance to cultivate a taste for the fruit, it met an ever-widening market. With these forces at work, stocks were so reduced that there was



BRANCH OF APPLES FROM WHITE SALMON VALLEY, WASHINGTON

a cry from the hungry mouths of the people who had got the apple-eating habit; nothing could stay the tide of advance, and the season closed in a flood of glory.

My theory is, that if you will feed the people in the autumn good, honestly packed apples at a moderate cost, this country can not and never will produce too many apples; but if you foolishly deprive them in the fall, you will pay for it by your losses (as you deserve to) in the spring.

The pleasant memories of that season will long remain with us, but it should be eternally stamped upon us that we became enriched wholly because we bought sanely, and because a kind Providence and a lean pocketbook forced us to market our fruit and pay consumptive instead of speculative prices. Had we held back our fruit and deprived hungry stomachs in the fall, we would have had no advance in the spring. From a somewhat careful observation at the market end, I am convinced that the whole success or failure of an apple season depends on whether or not you start the season right; that is, whether or not you get the people to consuming them at the gathering season, and this again depends on whether or not you pay conservative, consuming prices, or extravagant, speculative prices, and thus drive your support away from you.

Mr. President, if I have digressed from my subject it has been with the design to draw a parallel between a season marked by sanity and culminating in success, and one started wrong and ending in disaster. In the one, the great public got its due, and the dealer prospered; in the other, the consuming force was not reckoned with, but disregarded, and the speculator became the victim of his own folly. It will ever be thus when the immutable laws of trade are transgressed and trampled upon.

But, to get back to my subject. The season of 1909-10—what a different outcome from practically the same set of conditions! Not less fruit, but more;

instead of \$1.50 to \$2.00 as the buying price, \$3.00 to \$3.50—a rise of 80 to 100 per cent—and why? Was it because we believed the fruit was better? Our reports said the contrary was true. Was it because we believed the crop was dangerously short? Hardly, because we listened attentively to those reports, and discussed them thoroughly on the floor of the convention. What other reason actuated us? I can think of nothing except that our tender consciences made us believe that we had more than our share of the profits out of that last crop, and wanted to spend it as we did in 1907. We succeeded most admirably.

We left the convention at Buffalo that beautiful summer day with protestations of loyalty to the association, with grateful hearts, and, as it proved, with light heads. Our bank accounts had not become so large as to be burdensome, for our profits at the most hardly offset our losses of the previous year, but then we know that banks are always liberal after a good year, and the convention had not passed twenty-four hours into history before we began to hear of prices twice as high as the year before, tree-run purchases, taking everything from the ground up. From the way some of the fruit looked when it got to the market, the conclusion was forced upon us that the fruit was bought by a blind man and packed by a deacon, for it was No. 1s on top and No. 10s the rest of the way through.

High cost apples are always followed by falsely-packed ones, as sure as the night follows day, hence, when we get the fever on us we not only lose our money, but disgust our trade.

And thus was launched the second disastrous season out of the last three.

My observation of the average apple man is that he is a thoroughly good fellow, and that he is sane on every other subject. He is a hustler and an optimist; in convention he is a conservative of conservatives, a perfect lamb, and a peaceful, quiet, well-behaved gentleman.



BETTER FRUIT FROM WENATCHEE VALLEY WASHINGTON

But you just start him wrong, and give him the tip that off in some corner of christendom there is a spot that has no apples, and instantly you have turned him into a force that goes pell-mell and rough-shod over everything, and the only way to stop him would be to catch him (if you could) and rope him as you would a crazy bull.

Every community has a buyer of this sort—you all know him; and yet, buyers of this class often set the pace for you and me. The logical thing to do with such a buyer is to let him go. He will soon get filled up; the growers know him and don't trust him, and while they are glad to use him as a means to pry open your bank account, if let alone such buyers will soon get all they can pay for, and there will be some left for you at a fair price. Better, far better, to have too few at the right price than to have too many at the wrong price.

The average apple man does not run amuck, but he is too often led into bad purchases by the individual described. He leaves the convention with a resolution to be conservative, but is stampeded by the reports he hears of sales made here and there to the plungers of the trade, and it only takes a few foolish purchases scattered about, in these days of telephone and active newspaper reporters, to alarm the over-nervous buyer, and presently the whole fraternity goes wild, and you have many of the elements of a stampede and all the elements of disaster. These sales, these utterly foolish purchases, if you please, are usually confined to a very few actual transactions, but every hill re-echoes them, and every barn door is a sounding board, and every grower a publisher.

The average apple buyer who leaves his convention full of conservatism and good sense, is prone to be driven off his feet; he loses his senses to these wild-cat operators, and lets these scattered sales excite him into paying exorbitant prices; he takes his eye off the consumer and the present market value of the fruit, and centers his attention on prospective values based upon what some plunger is paying for fruit, and in a moment, what follows? This lamb of a conservative begins to lose his shaggy coat, the bear suddenly begins to sprout a pair of horns and to take on a very optimistic view as to what fruit is going to bring in April. He raises his buying price to a point that discourages fall consumption. The end is not hard to see; everybody gets the fever; speculation is rife; the public stops eating apples; every storage is filled and every farmer's barn becomes a storage house. In April, the consuming public has to be reckoned with—the last stage is reached. The dealer who has lived on hope all winter is now ready, like a "lousy calf," to die in the spring. Several feet of the horns he had sprouted in the autumn have been knocked off, and in the place of them have grown (and very appropriately) a magnificent pair of ears, and he most closely resembles that milder beast into which he has evolved.



WILLIAM L. WAGNER
President of the International Apple Shippers' Association

Buying apples at a high price and tree-run is about as good a speculation as Horace Greeley's pork raising. Mr. Greeley is said to have bought a pig in the spring for one dollar, fed it forty dollars worth of corn, and sold it in the fall for ten dollars; he lost money on the corn, but just see what he made on the pig! The buyer who undertakes to cheapen his number one fruit by buying tree-run may make a good profit on his number ones, but his waste costs more than Horace Greeley's corn.

The year 1909 had sprouted the most prodigious crop of long horns and big ears that the country had ever seen; they were at fighting length by the time pears and early apples were ready to move. The bears had either been gored to death or kicked out of the arena by the long-horned or long-eared gentry; the bulls were rampant and ferocious; the asses were braying short crops and long prices; the stampede began. Three to \$3.50 was paid for fruit without much

regard to quality, and the cry went out that anything was good enough for the barrel operator this year. The evaporator, the cider mill, and even the hog pen, was sacrificed to the foolish idea of values, and do you wonder that there were losses? These prices to the farmers meant \$5.00 to the consumer. It also meant, as high prices always do, poor packing and a lowering of quality incompatible with a large consumption. Newspapers advertised conditions, and the consuming public made up their minds that they could not eat apples, and fall consumption fell to low proportions; growers became stampeded too and turned into speculators, with the result that apples you could not buy in October for \$3.00, you could, and did, buy in January for \$2.00. Your lesson was being learned, and your defeat became certain. The apples you owned didn't look more than half as large to you then as they did in the autumn, but your load seemed twice as heavy. By January, you

realized that you were stuck, and that it was because of your own folly. It had been vain in the fall to argue to you that Florida had 6,000,000 boxes of oranges to market; vain to call your attention to the large peach crop, the plum and the grape crop that was being harvested. You had all these facts before your very eyes, and yet you disregarded facts and took to pursuing shadows, and I know of no more fleeting shadow than is cast by a poor quality of apples bought at a high price.

The consumer heard of the high prices and instead of buying and consuming our specialty, he bought those cheaper products—oranges, bananas and grapes. He canned largely in the fall and bought California dried fruits at unheard-of low prices; thus, he got along without apple pies on his dinner table and baked apples with his breakfast. The wage-earner's child went to school without an apple in his basket, for this fruit had been taken from the list of necessities and placed on the more restricted list of luxuries. Your ideas of values had placed them there, and each and every year your actions will continue to decide whether or not the great masses of our people are to be allowed to enjoy this most wholesome of fruits.

Now, a word to you boxed apple men, although that is a subject upon which I do not feel capable to address you, never having been into your territory and

measured the horns or ears of your operators. I can only judge you from a distance, but unless signs fail me, every word I have addressed to the barrel operators applies with equal force to yourselves.

I do not know (except by hearsay) how wild you got as to prices, but I do know that your packing, from some sections, was bad—much of it very bad. We don't need your number two fruit in the East, and if last season's packing is a sample of what you intend in the future, you may well hesitate about setting out more orchards, and would better reserve your land for corn and alfalfa. Your packing has given your fruit a set-back, which, if repeated, you will never recover from. With all the superb fruit that you raise, you can control the trade for strictly fancy uses only by making your labels stand for honesty and perfection. Until transportation charges are very much reduced, it is a waste of money, time and energy to pack for the Eastern markets anything but your best fruit. If you will operate sanely and buy conservatively, the public will appreciate your fruit, but they will not support you unless you give them honest value and honest packing as well. Are you broad enough, and are your growers wise enough to profit by last year's lessons? If so, your enterprise, backed up by your superb fruit, will carry you to the front, and the only way that Eastern orchard-

ists can hope to compete with you in the markets of the world is to grow better fruit than they are now doing, and to grade and pack it better. The slower they learn this lesson, the shorter time it will be, if you let your good sense and not your greed actuate you, when you will come into control of a business which your soil and your climate makes possible, but you cannot do it by extravagant prices and poor packing. Gentlemen of the West, bear this in mind.

The purpose of these conventions, and of this organization, is not to fix prices, but is entirely educative. We come here to learn conditions and to further the real interest of every element of the trade—the grower, the operator and the consumer should likewise be benefited by our deliberations and exchange of ideas. In conserving our own interest, we cannot afford to overlook the interest of either the grower or the consumer—both are entitled to fair, honest and just consideration. You cannot get along without either. You are just as important to the grower and consumer as he is to you. You are the means through which a proper distribution of the grower's product is made possible, and you are also the means, and the only means, by which the consumer may be steadily and effectively supplied. Too often, in our eagerness to succeed, we are forgetful of these facts, and whenever this



CITY OF TWIN FALLS, IDAHO, THREE YEARS OLD

Courtesy Oregon Short Line Railroad Company



VIEW SHOWING PART OF THE KEECHELUS LAKE RESERVOIR SITE. THE WATER IS USED BY THE SUNNYSIDE WATER USERS' ASSOCIATION FOR IRRIGATION IN THE GREAT YAKIMA VALLEY, WASHINGTON

becomes true, we are getting on dangerous ground, lessening our usefulness, and endangering our own best interests.

In arriving at a buying basis, the danger is that we become localized in our views and are apt to lose sight of the wider field of observation that is open to us. Remember that the productive possibilities of this great country of ours are prodigious—that new orchards are coming into bearing much faster than the old ones are going out. All fruit production, in fact, is growing more rapidly than our population. Florida is again coming forward with six millions or more boxes of oranges, which means in all likelihood, low prices. California evaporated peaches are being bought at four to four and a half cents a pound on the Coast, which makes it impossible for evaporated apples to sell high. Southern sun dried apples are seeking a four-cent market in Eastern cities already. The hurricane-swept West Indian banana groves, whose output was reduced for the past three years, is back into full productivity, and you should not lose sight of the fact that bananas are one of the chief competitors of our specialty. Peach crops have been very heavy the country over, and it will follow that both canned and dried peaches will be low in price.

Business conditions are not of the best; money markets are high; the general cost of living is out of proportion to the wages of working men; all these facts bear heavily against high-priced

apples, and are worthy of your thoughtful consideration and mine. The reports indicate that liberal quantities of fruit now hang upon the trees, and if we act conservatively and operate wisely, the great public may enjoy at a moderate and popular price that king of all fruits, the American-grown apple.

Don't deceive yourself into believing that quality alone will settle all your business difficulties and assure you a profit. Quality figures heavily, it is true, and is a large factor making for ultimate success.

Values, values, values, is what the American people are demanding in these times when it is hard to meet the family requirements for necessities out of the family income. Values they must have, or they will use your specialty only for Christmas tree ornamentation.

My experience at the selling end is that the public is supplying itself with fruit along the lines of least financial resistance. Logically, that ought to mean a large consumption of apples. Providence has intended them for the whole people, otherwise, the apple tree would not flourish as it does in nearly all climes and under all sorts of conditions. If you attempt to take this matter into your own hands—I am speaking to grower and shipper alike—and by putting fictitious values on your fruit, deprive the common people of their just heritage, you will suffer (as you ought) the consequences of your selfishness and greed.

To arguments of mine last autumn

against high values, a prominent speculator in this state used this reasoning—at first thought it may seem reasonable to many: Said he, "I have just been on a long trip of observation, both East and West, and I find all of the important necessities of life are exorbitantly high. Meat, eggs, butter and poultry are the highest ever known; flour, beans and many other staples are also very costly. Do you mean to tell me that all these articles can bring extreme prices and apples not bring extreme prices too?"

My reply to him was this: "The articles you mention are all the primary necessities of life; they must be consumed to support life itself, and the cost must first be deducted from incomes, and apples must be bought out of the surplus. If no surplus remains, after these large necessary expenditures, is it not a reason for low-priced apples instead of the contrary?"

The logic of this answer met no responding chord in this speculator's mind. Does it appeal to you? You may even advance a step further, and say that clothing is high; rent is high; and even that in the upper walks of life, gasoline and the other accessories of the automobile are cutting holes in the incomes of many, that effect all lines of business. Is this true reasoning? Is it far-fetched? Or does it appeal to you as thinking, reasoning business men?

These conditions affect the grocer, the butcher and the tailor, and they recognize them. Are the sensibilities of the apple

producer and the apple speculator less acute? Are we less astute than men in other branches of the commercial life? Reason, reason, solid, hard thinking, is the need of the hour. Calmness, soberness, thoughtfulness, are the watchwords—success, the legitimate goal.

I am not an advocate of either low or high prices, but of fair prices, fair alike to grower, consumer and ourselves, and believe that is the attitude of this organization, and if I believed otherwise I would not be a member of it. Neither as individuals nor as an organization can we afford to be anything else than useful to the other two great interests involved, nor along any other lines can we succeed.

Every individual member leaves this convention perfectly free to be a bear, a bull or an ass, but not obliged to be either. He may use good sense and be conservative in his operations and meet a fair measure of success, or he may grow horns and plunge himself into bankruptcy, or may ornament himself with prodigious ears and bray himself broke—there is no one to dictate to him what course he shall pursue, the choice is left to the individual, his own course identifies the species to which he belongs.

Membership in this organization is purely educative and not parental.

The best set facts to be obtained are yours, use them as you see fit; intelligently, if you will; foolishly, if you must; but remember that conservatives, and only conservatives, succeed in the very hazardous business that we are engaged in. Now, what are the real lessons to be



IRRIGATING STRAWBERRIES, ALSO SHOWING METHOD OF UTILIZING LAND UNTIL THE FRUIT TREES DEMAND THE SPACE
Courtesy Oregon Agricultural College

drawn from past experience in the apple business? To me, they are these: the men who have made a fortune in the business, even by sane, careful methods, are very few; in fact, I can recall none who have become very rich as the result of their apple speculations. That is one lesson that it is important for us to learn. Another is, that you may select at random twenty-five operators in any section of the apple producing centers, and out of this number, how many, who have operated ten years on end, will you find have made more than a living at the business? My research leads me to believe that you will find they will grade up about as follows: Five have made a living and accumulated a moderate amount of property; ten have made a living only; five are holding on by the

eyelashes, and the other five have gone into bankruptcy. We are dealing now with conservative, sane operators who for ten years have operated carefully and now we turn to the plunger of six, eight and ten years ago, and of him it is in vain that we look for even his footprints; he is swept from the face of the earth, and is remembered only by the debts he has left unpaid. Even with these facts before them men will not heed the lesson, and with each autumn

comes forth a new crop and every spring brings an addition to the scrap heap. Look around you men, and see if these words are not true. Look behind you and recall the plungers that have had a skyrocket career; look at the present and contemplate their condition; look at the future and make up your mind to neither be a human skyrocket nor a bankrupt, but mark out a conservative course, regulate your prices by consumptive and not by prospective values, and remember you do not have to have all the fruit that grows, and that a moderate amount bought conservatively is apt to make you a profit, while immoderate buying at extreme prices is sure to make you a loss, and that plunging will add your financial carcass to the scrap heap already piled too high with the wrecks of apple speculators.

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INTAKE, DAM AND CANAL OF SUNNYSIDE
GOVERNMENT IRRIGATION PROJECT
YAKIMA VALLEY, WASHINGTON

COLORADO fruit growers have long known of the destructive nature of the crown gall to all kinds of fruit trees. There seems to be some conditions here which make the disease much more destructive than in the humid states. In fact, it has caused so little damage in the East that nurserymen come to regard it as harmless. This probably accounts for the attitude of Eastern nurserymen toward our inspection laws. Not a spring passes but what some of our inspectors are threatened with damage suits by some nurseryman who has had his stock condemned. Some nurserymen claim not to have heard of the disease before. About four years ago the United States Department of Agriculture published the results of some experiments with crown gall which apparently proved that it is not harmful to apple trees. While this may be true under the conditions at St. Louis, where the experiments were conducted, every Colorado fruit grower of a few years' experience knows that here the reverse is true. Experience has shown our fruit growers that a great many trees die each year from this cause. And it has been noticed in a great many instances that if a badly infected tree is planted, it rarely makes much of a growth and usually dies before it is ten years old. The inspection of nursery stock should continue to be as rigid as in the past, and it is likely that the interests of all will be best served if all diseased trees are destroyed as soon as discovered.—The Farm Journal.

EXPERIMENTS ON FERTILIZING APPLE ORCHARDS

BY J. P. STEWART, HORTICULTURIST PENNSYLVANIA STATE COLLEGE

PROBABLY the largest and most comprehensive series of experiments on apple production anywhere is now in its fourth year of operation in Pennsylvania under the management of the Agricultural Experiment Station, at State College. These experiments are located in twelve parts of the state, involve thirteen varieties, ten soil types, and cover a total of ninety-one acres. Four leading questions on apple yield and quality are being studied, viz: the influence of fertilizers, of cultural methods, of cover crops, and of heredity (as indicated by selection from superior individuals).

A progress report on the first two influences has just been issued by the Station as bulletin 100, which may be obtained on application to the director of the Experiment Station, State College, Pennsylvania, or to Professor J. P. Stewart, who has charge of the work. The report gives data from ten experiments covering forty-nine acres and containing 2,219 trees in partial or full bearing. This data shows net increases from fertilization varying from nothing up to \$267 per acre. The report further indicates something of the conditions under which success or failure may be expected, or methods whereby it may be determined.

The fact is brought out that fertilizers, being but one of the many factors involved, are of certain value only where plant food is limited. In the presence of other weaker factors, the effect of fertilizers, as well as of undue attention to any factor, may be largely or wholly lost. The important thing, therefore, in the economic production of first grade fruit is to secure and maintain a balanced treatment of all the essential factors.

In the detailed results, nitrogen has proved most useful in increasing the yield of fruit as well as in improving growth and foliage. Its use is generally accompanied by considerable reduction

in color, doubtless largely due to delayed maturity. This objection, however, does not hold except for the red varieties and is lessened for them on the earlier soils and in localities with long growing sea-

son. The nitrogen may be applied in stable manure, leguminous cover-crops, or in commercial forms. If applied in very soluble forms the application is probably best made somewhat after growth starts to insure its utilization by the trees. Some of the best results have been obtained by such applications made in early July, though this is considered as late as is practicable to affect fruit buds for the following year's crop, and earlier applications are preferred.



POTATO FIELD UNDER IRRIGATION, BOISE VALLEY, IDAHO

sons. The nitrogen may be applied in stable manure, leguminous cover-crops, or in commercial forms. If applied in very soluble forms the application is probably best made somewhat after growth starts to insure its utilization by the trees. Some of the best results have been obtained by such applications made in early July, though this is considered as late as is practicable to affect fruit buds for the following year's crop, and earlier applications are preferred.

Along with the nitrogen, it is also well to supply phosphoric acid and potash. On the other hand, neither lime nor "floats," when applied alone, have thus far shown any marked beneficial effects.

While it is practically impossible to make any general fertilizer recommendation that will suit all conditions, yet from the present data, the following combination is suggested. Any fertilizer carrying about thirty pounds of actual nitrogen, sixty to seventy-five pounds of actual

phosphoric acid (P_2O_5), and fifty pounds of actual potash (K_2O) to the acre should prove satisfactory. These amounts are approximately obtained by 600 pounds of a 5-10-8 fertilizer, or they may be

exactly obtained by mixing either of the following combinations:

(a) One hundred pounds nitrate of soda ($15\frac{1}{2}\%$ N); 100 pounds dried blood ($12\frac{1}{2}\%$ N); 250-300 pounds steamed bone meal (24% P_2O_5 and 1% N); 100 pounds sulphate of potash (50% K_2O).

(b) One hundred pounds nitrate of soda (15% N); 120 pounds dried blood ($12\frac{1}{2}\%$ N); 400-500 pounds acid phosphate (15% P_2O_5); 100 pounds sulphate of potash (50% K_2O).

The above amounts are for bearing trees of medium age, where fertilizer is apparently needed. For younger trees with their greatly lessened draft, these amounts may often profitably be reduced by a half or more, with corresponding increase for older trees. The combination is offered as a beginning treatment for average conditions and is expected to be varied as later results direct. If sufficient nitrogen can be obtained in green cover crops, or in stable manure, it can well be reduced in the combination above, preferably first omitting the dried blood. Annual applications of this fertilizer, alternated with stable manure at the rate of about ten tons per acre at least every third or fourth year, if available, will probably give best results.

The sulphate form of potash is recommended, to be on the safe side, because of certain evidences of its superiority over the muriate, at present unexplained. Also in the practice of fertilization, it should be remembered that the effect of a fertilizer on the crop is not to be expected before the second year, and possibly even later. Moreover, proper moisture conditions are essential to the securing of best results from fertilizers. In most places the best moisture supply is obtained by the soil or dust mulch maintained by frequent tillage. Where tillage is inadvisable, however, the present data show that proper moisture conditions can be secured very satisfactorily by means of a good mulch of foreign materials, such as straw, chaff, leaves, manure, or dead weeds.



WINTER DAYS IN A SIX-YEAR-OLD ORCHARD IN PAYETTE VALLEY SOUTHERN IDAHO

PROHIBITION—ITS MEANING TO THE NORTHWEST

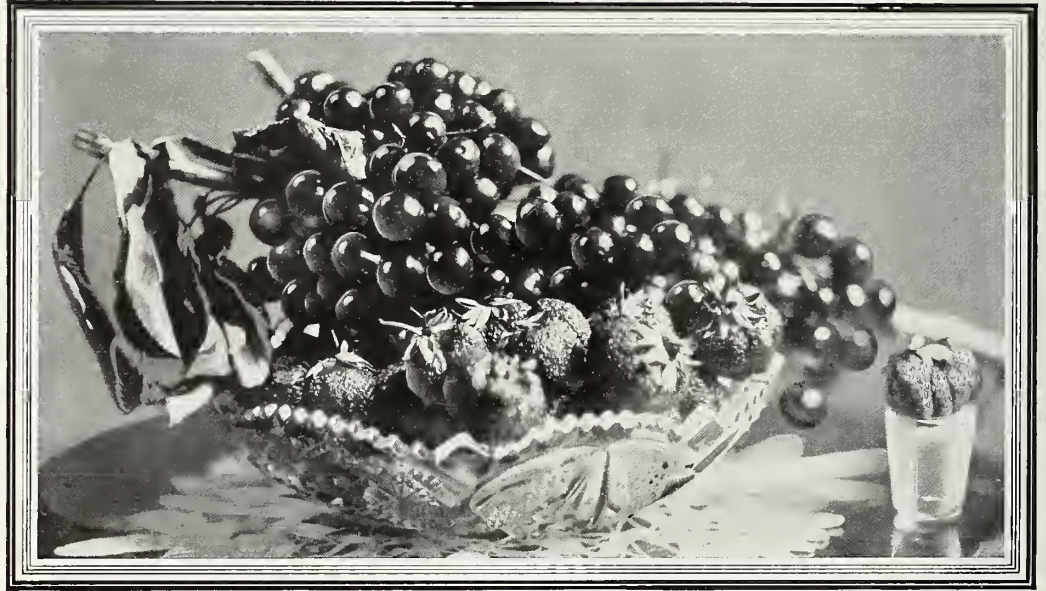
BY ALBERT ANGERMAYER, SPOKANE, EUROPEAN AND AMERICAN VINEYARD AND WINE EXPERT

IN THE States of Washington, Oregon and Idaho, there are districts and lands, several millions of acres, whose climate, location and soil conditions can produce a better and finer quality of wine grapes than the famous wine cultivation districts in Germany (Rhein, Mosel, Saar, Pfalz, etc.), as well as in France (Gironde, Medoc, Burgubd, Champagne, etc.), where quality wines were produced that at public auctions brought the enormous prices of 43,000 marks for 12,000 liter, which is the equivalent of \$10,000 for 300 gallons! The buyers of such choice wines resided mostly in New York, Boston, Chicago, etc., also in Berlin, Bremen, Hamburg, Paris, Wien, London, etc.

California, where the climate is too warm at the time of the grape wine harvest, can produce good sweet wine with high alcohol standard, but never mild, choice dry wines like Germany or France. The wines grown in the Eastern states, on account of their rough character, do not come into consideration and comparison with the fine, mild, delicious and choice qualities that can be produced from certain foreign wine grape varieties in Washington, Idaho and Oregon. The world-famed "Rheingau" in Germany, with its quality for wine cultivation, extraordinarily fortunate sheltered location, latitude, elevation, soil conditions, water atmosphere, slope, sun-reflex, is until now known as the best in the world, but they are all excelled by some south-slope lands on the Columbia River, where these virgin, enormously fertile lands will produce not only the best, delicious, choice dry wines in the world, but also greater quantities, and in which soil the, in other states so dreaded pest, phylloxera, cannot exist.

Without any risk, but with safety and comparatively little capital, these south-slope lands on the Columbia and Snake Rivers (where irrigation is necessary), and on the Clearwater and Umpqua

Agitation and laws favoring state-wide prohibition in regard to alcoholic beverages, will and must engender strife and bitterness among our people. It will be detrimental in every way to the



A TEMPTING DISH OF CHERRIES AND STRAWBERRIES, CRESWELL, OREGON

Rivers (where irrigation is not necessary) should be planted with suitable foreign wine grape varieties, maybe also with some of the best foreign table grapes that grow here to perfection. After three years, when the grapevines commence to bear, the harvested wine grapes, by making pure quality wines, eventually also champagne and unfermented grape juice, and then selling over the whole world, will bring enormous profits, many times more than the profits of all other fruits.

The present Prohibition movements in America are appearances of disease in the public mind and the known bazilles are bad politicians. Prohibition and local option legislation works confiscation of property, also against the best utilization of lands, and we must solemnly protest against this confiscation of property and free right to produce anything and to market it, without due process of law, and with just compensation, because it is contrary to the spirit of American institutions and should not be tolerated by a free people. It is unfair to say, as it is impossible to conceive, that the evils can be cured only by destroying the industry and the natural wine produc-

best interests of our country. The great body of American freemen believe in the right of each man to eat and drink what he will, and stand ready to uphold such rights when exercised under proper conditions. Party politics, like religion, is inherent in most of us, and once inculcated in the average man, is hard to overcome; but overcome it must be if we are to preserve not only our rights but what is left of them by the grace of the Anti-Saloon League, respectively of the federated churches with its skillfully and completely organized political force in the country. It is good, that in this free land of ours we have not yet reached the time when our Government is to pass into the hands of any church, or any federation of churches, or into the control of any united church forces, in action or out of action. Our ancestors wrote into our constitution, in letters of blood, the decree that church and state shall be forever separate, and I believe that our American people, when the menace is fully made plain to them, will not permit or tolerate by subterfuge and indirection that which is specifically forbidden by the highest written law of our country.

All necessary reforms can be, and should be, carried out in a temperate and just spirit without destroying legitimate business enterprises and natural products. Pure wine is a natural product and not manufactured. It is in itself the natural fermented blood of the grapes, without any by-substance. Whisky and all other high-grade alcoholic drinks are manufactured. It is a fact established by the most incontrovertible scientific experiments, that pure grape wine, also pure apple wine, affords not only nutriment, but that, in fact, it is the most assimilable



EIGHT HUNDRED POUNDS OF ROYAL ANNE CHERRIES WERE PICKED FROM THIS TREE IN ONE SEASON
Owned by E. L. Curtiss, The Dalles, Oregon

nutriment preferred by the system, when it has the choice, and the only available nutriment capable of sustaining life in the case of many diseases, and especially in old age. The result of drinking pure grape wine is so very different from that of other alcoholic drinks that the cause is found principally in the remaining substances of the wine.

Temperate wine drinking gives life to the fantasy, strengthens the mind and senses, the impressions will be quick and clear and the opinions fuller, tiredness of mind and body will disappear; a feeling of comfort and pleasure, which relieves the mind of all worry and troubles. People in general, who live in wine districts like on the Rhein, Mosel, Pfalz in Germany and over most all France, are more serene, brighter and sociable; they are more open-hearted and accommodating in their behavior and bear no grudge after being made angry.

Intemperate and too quick drinking, no matter if water, wine, beer, coffee, tea, or any other beverage, is just as injurious to the health as intemperate and too quick eating. The immoderate drinking and the intoxication can be remedied much easier and surer by strict laws forbidding by penalty the so-called "treating" and standing at the bar in the saloons entirely. The hundred millions of people in France, Germany, Austria, Italy, etc., who drink wine, beer and other beverages every day of their lives, have no use or need for prohibition, and very seldom will you find there a drunken man on the streets. There is no doubt that the temperance question could be practically solved in the United States if we would adopt the Italian, French, or German system of allowing the sale of wines and beers freely under only a small tax and the custom of drinking light, natural wine daily at the table during the meals.

Our present system of putting a big tax on the sale of wine, which is a pure natural product, is absurd. The license laws in the different states seldom make a distinction between the sale of wines and strong liquors in the amount of tax to be paid, with the result that the license fees for the sale of light wines have been

placed so high as to practically prohibit the opening of those useful and desirable places which are to be found all over Europe generally. The hotels and restaurants in Europe are patronized in the day for breakfast and luncheon and in the evening for wine, beer, vermouth, coffee, ices, etc. None of these places have bars at which to get quick drinks, which are injurious, but chairs and tables to take their drink with leisure, also for convenience and recreation, and there is no standing up while drinking, like in this country. Not only men, but also ladies and whole families find recreation and sociability in an European restaurant, but no drunkenness, because you have always occasion to eat something between drinks and also because of the great shame to be intoxicated.

There has been a remarkable increase in the consumption of American wines throughout the United States during the last year, particularly in what is called the "home trade," according to a statement issued by the American Wine Growers' Association. Three reasons are responsible for this showing, the statement continues: "First, the temperance agitation throughout the Union,

which has led many to discontinue the use of alcoholic liquors for the lighter wines; second, the tariff, which puts a high import duty on foreign wines, and third, the lower price of the American wines."

The States of Oregon, Washington and Idaho will produce, earlier or later, certainly the finest and best quality of dry wines, also champagne, grape juice and table grapes in the world. Not the apple, but the grape will here take the lead and world fame over all other fruits,



FLAME TOKAY GRAPES WEIGHING THREE TO FIVE POUNDS A BUNCH, GROWN BY J. A. FLECK, THE DALLES, OREGON

because the profits in proper foreign wine grape cultivation, and in fine, mild, choice wines are enormous. Intelligence, perception and confidence will come.

AMERICAN ASSOCIATION OF NURSERYMEN

Officers and Committees for 1910-1911—President, Wm. P. Stark, Louisiana, Missouri; vice-president, E. S. Welch, Shenandoah, Iowa; secretary, John Hall, Rochester, New York; treasurer, C. L. Yates, Rochester, New York.

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SOME FINE BUNCHES OF TOKAY AND MUSCAT GRAPES GROWN BY J. A. FLECK, THE DALLES, OREGON

APPLE MARKET AND DANGER OF OVERPRODUCTION

BY H. N. WILLIAMSON, SECRETARY STATE BOARD OF HORTICULTURE, PORTLAND, OREGON

THE question of danger of overproduction is one that many a producer must face. The apple planter is not single in having this question to consider. Overproduction is a matter which is governed by many factors. It so happens when a product can be easily and quickly produced, and the increase of production does not require an unusual investment of capital or the use of more than ordinary skill, a season of extremely high prices is almost certainly followed by a season of overpro-

the State Board of Horticulture. Those who come to the Pacific Northwest with the intention of engaging in the apple industry hear of so many apple-planting projects of apparently great dimensions that they become alarmed lest when these projected orchards all come into bearing the supply of apples will far exceed the demand. There are two common causes of an erroneous belief in the danger of an early overproduction of apples. One of these is the assumption that the conditions in the matter of apple

a paper which he read before a farmers' institute held in Medford in 1892 he said:

"The apple—in this county alone perhaps 50,000 trees are growing. When these trees all come into bearing, say, ten years, where will we market all this crop of apples? The 50,000 trees in the Rogue River Valley will produce 250,000 bushels. This amount is but a drop in the bucket compared with the amount produced in Northern California, Oregon and Washington. Now, where are we to find a market for all these apples? When this

time of overproduction does arrive where will some of us who have been planting large orchards find ourselves?"

Seventeen years have elapsed. The price of apples in the Rogue River Valley has never been lower than it was when Mr. Stewart read his paper. It has averaged much higher since then and the tendency of the price has been up—not down. The Rogue River Valley long ago passed the point of producing 250,000 bushels of apples in one year. Mr. Stewart's error lay in thinking that everybody in Oregon, Washington and Northern California who was planting apple trees would give them the same constant and thorough care that was given by the group of thorough orchardists in the Rogue River Valley who have made the industry a great success there. At the time

he read his paper there were not less than 1,800,000 young apple trees growing in Oregon alone. Yet Oregon produces less apples now than it did then, although of much higher average quality and of greater aggregate value per year. The crop now is grown on a very small fraction of the young trees then in the state, and in a few localities—the Rogue River and Hood River Valleys, the Grand Ronde, and a few other places where apple raising was made a specialty and proper care was taken of the trees and orchards. The great mass of those young trees have never counted in supplying apples for market, because they have not received that care which an apple tree must have to enable it to produce fruit for market.

The production of apples for market for eating purposes is of comparatively recent origin, except in a decidedly small



Nine Year Apple Orchard South of Fruitland.



Home of J. M. Hamilton South of Fruitland.



Home of Q. Ziller East of Fruitland Depot.



Farm and Orchard at North West Corner of Fruitland Townsite.

SCENES AND HOMES IN SOUTHERN IDAHO

duction. On the other hand, when we have to deal with an article the production of which requires considerable investment of capital, and a delay of years must ensue before returns come, the occurrence of unusually high prices does not necessarily bring about overproduction. To illustrate the effect of delayed returns in preventing overproduction, take asparagus. It often sells for high prices in Portland markets, yet there has not been overproduction here. The man who always plants the article which is selling at highest prices at the time he plants, goes into the raising of some article like potatoes. He does not think favorably of waiting five years or more for returns. Of course, you see the application to the apple industry.

This question of the danger of overproduction of the apple is the one asked more often than any other at the office of

planting which exist west of the Rocky Mountains prevail throughout the United States, and the other is that the extensive planting of apple orchards is not of itself a sure indication of an increase of production proportioned to the increase in the area of orchards. Even men of high intelligence have been led into error by the assumption that this is the case. J. H. Stewart, the man who founded the modern commercial apple growing industry in Oregon, made this mistake. He was a skilled orchardist before he came to Oregon and was familiar with the condition of the apple producing industry on both sides of the Rocky Mountains. The orchard which he established near Medford is still one of the finest in Oregon, or in the world. Yet this skilled orchardist and successful business man was convinced in 1892 that we were then on the verge of an overproduction of apples. In

way. A century ago probably nine-tenths of the people of the country lived on farms. Even the minister, the doctor and the lawyer of the smaller towns and villages were apt to live on small farms in the outskirts of the village and to raise the fruit they consumed. Many apples were grown, but they were valued mainly for the production of hard cider and apple jack or apple brandy. In the early days only a small portion of the limited city population ever bought apples, and farmers never bought them. Now conditions have radically changed. Perhaps two-thirds of the people now live in the cities, towns and villages, and the majority of them are apple eaters. A great number of the farmers are now buyers of apples and the proportion of them who buy apples is growing, and will continue to grow.

The first great boom in the planting of apple orchards came in the period following the Civil War. Apple orchards then acquired a new value. The rapid growth of city population and the increase in wealth and wages resulted in a rapid increase in the demand for apples for eating out of hand. Owners of apple orchards received much higher prices for apples than they had before obtained. The profits in the business brought about very extensive planting of apple orchards in nearly all of the states adapted to the production of this fruit, and notably in Southern Illinois and in Michigan. Some years later hard times checked the development of the industry for a time, but soon it was learned that apple growing had proved very profitable in some places and the great apple planting period of 1887-1893 commenced. For the United States as a whole the planting of apple trees was on a vastly larger scale than it is at the present time. We have no census figures on the number of apple trees in the United States prior to 1890. In that year the apple trees of bearing age were counted and amounted to approximately 120,000,000. In 1900 all of the growing apple trees were counted and the number was approximately 200,000,000. It is certain that there were more than 80,000,000 of the growing apple trees in 1900 which had been planted after 1880. If the mere expansion of apple orchards of itself assures a corresponding increase of production of apples there should have been an enormous increase of production of apples in the United States in the last few years. What are the facts in the case? The

apples we are interested in are those which go to market. The marketed crop of the United States is quite closely estimated at the close of each season by the Apple Buyers' Association and by other

the production of the last fifteen years in three groups of five years each, which is sufficient to make allowance for temporary variations of production. The average annual commercial apple crop of



MELONS, PUMPKINS AND SQUASHES GROW TO GREAT SIZE IN THE BOISE VALLEY, IDAHO

authorities, and their estimates are not far from correct. The final estimate for the crop of 1909 is not yet made, but the crop will not exceed the figures given below. In round numbers the commercial crop of apples in barrels in the United States since 1895 has been as follows:

Year	Barrels
1895.....	60,540,000
1896.....	69,070,000
1897.....	41,530,000
1898.....	28,570,000
1899.....	37,560,000
1900.....	47,960,000
1901.....	26,970,000
1902.....	47,625,000
1903.....	45,000,000
1904.....	45,300,000
1905.....	23,500,000
1906.....	38,000,000
1907.....	29,070,000
1908.....	22,500,000
1909.....	22,000,000

As the apple crop varies greatly from year to year, it is not a correct basis to compare the small crop of last year with the record crop of 1896 to get at the amount of decrease in production which has taken place. I have therefore grouped

the United States in periods of five years has been:

- During the five years ending with 1899, 47,500,000 barrels per year.
- During the five years ending with 1904, 42,570,000 barrels per year.
- During the five years ending with 1909, 26,000,000 barrels per year.

This shows that at a time when the vast increase in the number of apple trees bearing in the United States would lead one to expect a vast increase also in the commercial crop of apples, there has in fact been a remarkable decrease in production. It has been suggested that the decrease in the commercial crop of apples has been the result of the demand for a better grade of apples, which may have prevented many apples from being sold which were marketable in former years. It is true that consumers are calling for a better grade of apples than formerly satisfied them, but it is the uniform testimony of all who are connected with the apple trade that, in fact, the scarcity of



ORCHARD SCENE AT WEISER, IDAHO

apples in late years has caused great quantities of apples to be packed for market which would formerly have been rejected. In many an Eastern newspaper which publishes retail market reports we find apples quoted by the quart. What sort of apples can be measured with a quart measure? An Eastern horticultural paper about a year ago published a life-sized illustration of some apples taken out of a barrel of New York state apples marked to indicate the fruit was extra Baldwins. Some of these apples were scarcely larger than common marbles. Only a great scarcity of apples permits apples like these, which can be measured in a quart measure, to be placed upon the market.

It is not hard to find the cause of this great decline in the quantity of apples produced for the market. We cannot have all the wonderful benefits of modern times without some attendant evils. When the fruits of all countries and the ornamental trees and shrubs from all parts of the world are distributed to every part of our country, we obtain with this fruit and these trees and shrubs insect pests and tree diseases from all parts of the world. It has been the spread of insect pests and tree diseases over the country which has been responsible for the great decrease of production of apples. The San Jose scale has been the most effective of the reducers. East of the Rocky Mountains apple orchards have in most cases been side issues. The farmer who owned an orchard has not been willing to give that orchard the care which an orchard must now receive in

order to keep down pests and produce marketable fruit. You need only go over the Willamette Valley and see what is happening to the old apple orchards on the average farm to know what is happening to the average apple orchards all over the United States east of the Rocky Mountains.

It is probable that the decline in apple production will soon cease and be followed by a period of growth until we again produce in the United States a supply adequate to the demand. The increase of population in the United States of itself increases the market demand at the rate of probably 3,000,000 bushels per year. There is also a vast deficiency to be made up. The question of vital interest to us in Oregon is, "Who is going to take advantage of this opportunity and supply the demand?" Is the weight of advantages on the side of the people east of the Rocky Mountains or with us? We must concede the East the advantage of proximity to market. On the other hand, the Easterners concede that we produce apples of greater beauty than theirs. They attempt to offset this admission by claiming that their apples in the East are better in quality than ours. As this claim is made by them in good faith, it needs some attention, in spite of the fact that the consumers in Eastern cities are willing to pay almost as much for an average box of our apples as for a barrel of their own. When asked why their apples are better in quality than ours, it is found they have formulated a theory that ours must be of poorer quality than the Eastern apples

because of certain climatic conditions they suppose to exist here, but which, in fact, do not exist. The old, and usually reliable, Springfield Republican discussed the matter editorially a few days ago. It referred to our warm, humid climate and the moisture-laden winds which bring us the semi-tropical and moisture-laden air which results from the proximity of that Japanese ocean stream some of our boomers have told such imaginative stories about. I will read a sentence or two:

"It is easy to produce fine-looking apples in a warm climate, but not so easy to grow apples as fine in quality and as solid in substance as are grown in our temperate regions. Fruit of this kind has lately come to Springfield from Oregon and Washington, where it has grown under the warm influence of the Japanese ocean current, and splendid-appearing fruit it is; but the nice quality of the apple of the Northeastern states seems to be lacking, and it fails to satisfy the cultivated taste of the Easterner, who still regards the apple as the superior of all fruits."

We fully agree with the Springfield Republican in its evident belief that moderate summer temperatures and dry air are conditions more favorable to the production of fruit of high quality than are warm summers and moisture-laden air. And in these particulars we have the advantage instead of the disadvantage. I have obtained from the Weather Bureau of the Department of Agriculture at Portland statistics as to temperature, rainfall, humidity and cloudiness at a



SCENE ON THE OWYHEE RIVER, FIFTY MILES FROM THE IRRIGATED SECTION OF SOUTHERN IDAHO



COMPLETED SECTION OF THE MAIN CANAL FORTY FEET WIDE. CAPACITY 1,500 SECOND FEET. CALDWELL, IDAHO

number of United States observation stations in Oregon and in the best apple growing sections of the East. All of the regular stations in Oregon are included, and represent the three different sections of the state—western, southern and eastern portions.

The aggregate rainfall, expressed in inches, for the four summer months of June, July, August and September is as follows:

In Oregon—At Portland, 4.81; Roseburg, 3.03; Baker City, 3.07.

In the East—At Detroit, 12.11; Buffalo, 13.26; Boston, 13.72.

The temperature at the same stations for the same four months is as follows:

In Oregon—At Portland, 63; Roseburg, 63; Baker City, 61.

In the East—At Detroit, 68; Buffalo, 66; Boston, 67.

The humidity of the air means the percentage of moisture which a given quantity of air contains compared with the whole amount it can contain at the temperature which prevails at the time of testing. The amount of moisture which a cubic foot of air will hold increases rapidly as the temperature of the air rises. Hence if the temperature in one place is 60 degrees and in another place 70 degrees, and the recorded humidity at both places is the same, say 70, there will be much more moisture in the air at the place where the temperature is the higher. It was not convenient to obtain figures on humidity and cloudiness covering more than one year, but we may assume that the season reported was fairly typical. At the stations named the average percentage of humidity for the same four

months of June, July, August and September was as follows:

In Oregon—At Portland, 68; Roseburg, 64; Baker City, 45.

In the East—At Boston, 74; Buffalo, 74; Detroit, 74.

The following figures show the proportion of the aggregate time between sunrise and sunset during the same four months when the sun was obscured by clouds:

In Oregon—At Portland, 47 per cent; Roseburg, 40; Baker City, 38.

In the East—At Boston, 53 per cent; Buffalo, 65; Detroit, 50.

This shows that, contrary to the belief of the Springfield Republican, the advantage is on our side both in moderation of our summers and dryness of our air. Our moderate summer heat and crisp, dry summer air puts the quality into our fruit; the low humidity and large proportion of sunshine give it the beauty of finish and richness of color so much admired. From an economic standpoint our dry summers are also an advantage in enabling us to spray more effectively.

I think these advantages of themselves fully offset the Eastern advantage of proximity to the markets. Our greatest advantages remain to be mentioned. In the East the apple orchard is a side issue; here it is a specialty. In the East the man who is growing apples is set in his ways and it is hard indeed to induce him to adopt methods radically different from those to which he has been accustomed. For generations the men who naturally tend to new things have left the East for the West, or have left the farm for the

city. Except in a few localities there is no indication in the East of any tendency to develop communities in which the growing of apples shall be first, and everything else secondary. Even men who appear to be among the better class of fruit growers there are predicting that the apples of the future are to be grown on New England hills which are too rough to be cultivated, or in orchards heavily mulched to keep the apples from being bruised when they are shaken from the trees. Twenty years ago, when the great modern campaign of agricultural and horticultural education was commenced and so much good advice was given at institutes and in bulletins and agricultural papers as to the care of orchards and the fighting of insect pests, I thought that long before this time the great majority of apple trees would be receiving good care. It has turned out that the great majority of apple orchards in the United States are cared for and the fruit therefrom marketed just about the same way today as twenty years ago. All through the apple raising districts of the East one can find individual orchardists of the best type, who are obtaining splendid returns from their orchards, but their methods have not been contagious. We here have learned the lesson that specialization is at the foundation of success in apple growing for market. This is not true of the apple alone. We all know how productive industries of many kinds have tended toward specialization and centralization, but it is not generally known that this tendency has already manifested itself in agricultural industries to a marked degree.

THIRD ANNUAL NATIONAL APPLE SHOW, SPOKANE

BY AUGUST WOLF

TEN thousand apple trees, 15,000 apple seedlings, 1,200 grape vines, 300 cherry trees, 250 pear trees, 175 peach trees and twenty-five prune trees have been offered to date to the management of the National Apple Show as additional prizes in various contests at the third exposition in Spokane, November 14 to 19. The donors are nursery companies in Washington, Oregon, Montana, California, Missouri, Iowa and Nebraska.

Accompanying the offers are endorsements of the scope and purposes of the exhibition, which has become an annual event, one of them saying that the last two shows have accomplished more to encourage fruit growing in the Northwest and throughout the country than any other agency. Another writes that the apple industry has received nationwide publicity as the result of these shows, also that the standard of fruit has been raised by the keen competition.

Extracts from some of the letters received by Ren H. Rice, secretary and manager of the show, follow:

Stark Brothers Nurseries & Orchards Company, of Louisiana, Missouri, in giving 4,000 apple trees, says:

"We want to be again represented at your big show, which has done so much in the past two years to encourage fruit growing, not only in the Pacific Northwest, but throughout the country. Every man interested in fruit growing should do something to boost the National

Apple Show, and it is our hope the organization will maintain the high standard set the last two years and that King Apple will come into his own in every region as well as in your great fruit garden."

The Sunnyside Nursery Company, of Sunnyside, Washington, writes:

"We feel very friendly toward the National Apple Show and we believe it is a great advertising medium for the entire country and every line of business, including our own, is stimulated by exhibits of this kind. We were well pleased with our treatment at your show last season. In offering 700 trees this year we expect you to use your own pleasure in naming the varieties on which they are to be given."

The Washington Nursery Company, of Toppenish, says:

"We take pleasure in offering a prize of 500 Jonathan trees, and suggest that you apply the prize for the best ten boxes of Jonathan apples. If you have any better suggestion, let us know and we will be glad to approve anything that sounds good to us. We are highly in sympathy with the plans and purposes of the National Apple Show and believe it has done, directly and indirectly, a great deal of good, not alone as nurserymen, but as citizens of the State of Washington. We wish you every success in the 1910 show."

Yakima Valley Nursery Company, Toppenish, Washington:

"This show is certainly of great benefit to the entire Northwest in that the publicity given the apple industry is national, and also that the keen competition tends to raise the standard of apples required. We take great pleasure in offering as a special prize for the Third National Apple Show 500 Yellow Newtown apple trees, straight one-year grafts, for the best ten-box display of Yellow Newtown apples. We thank you for the privilege of making this donation and we wish you the greatest success possible in your worthy enterprise."

Lafayette Nursery Company, Lafayette, Oregon:

"Certainly the National Apple Show has done wonders toward the development of the apple industry in the Northwest which has an important bearing on other enterprises. We sincerely hope the third National Apple Show will be a great success, which we have every reason to believe that it will. We gladly give 200 cherry trees and 150 apple trees, to be awarded as prizes on the Sierra Beauty apple."

C. F. Dallman, superintendent of the Missoula Nursery Company, Missoula, Montana, writes:

"I fully realize the value of your work in showing the nation what we can produce in the Northwest, and shall always be in favor of doing what I can for the success of the show. I am more than glad to repeat the prize of last year, consisting of 300 first-class McIntosh



DIVERSION DAM IN BOISE RIVER AT THE HEAD OF THE CANAL THROUGH WHICH WATER WILL FLOW TO THE DEER FLAT RESERVATION, SOUTHERN IDAHO. DAM UNDER CONSTRUCTION



WHEELS ARE SOMETIMES USED TO RAISE WATER UPON SMALL TRACTS; HOWEVER, MOTOR POWER IS USED MORE FOR LARGE TRACTS. CALDWELL, IDAHO

apple trees, for the best box of McIntosh apples, regardless of where they are grown."

F. W. Meneray, Crescent Nursery Company, Council Bluffs, Iowa:

"We will thank you for the opportunity to give as a special prize for the third National Apple Show 500 one-year apple trees of the best standard varieties in an assortment. If this is acceptable, will be pleased to have you list it."

Northwest Nursery Company, North Yakima:

"We wish to assure you of our approval of the prize feature at the National Apple Show, as we believe the exhibit at Spokane is doing more to stimulate the fruit growing industry than any other one institution. We offer 400 trees of any variety in our nursery for the best district exhibit."

Milton Nursery Company, Milton, Oregon:

"We fully realize the great benefit this National Apple Show has been to nurserymen in the way of encouraging the planting of large commercial orchards, as well as an advertisement of the advantages of the Northwest. We gladly offer you 500 one-year-old, first-class Rome Beauty apple trees as a premium, and we wish you every success in making the third National Apple Show the best ever held."

Vineland Nurseries, Clarkston, Washington, writes:

"We thank you very much for the opportunity extended to us to make another special prize offer at the National

Apple Show. We will repeat our offer of last year of 500 Rome Beauty apple trees."

Fresno Nursery Company, of Fresno, California:

"We repeat our offer to give a prize of 100 fruit trees or 500 grape vines on any exhibit designated by the trustees. We are willing at all times to help along the good cause."

Eden Valley Nursery, Medford, Oregon, offers \$20 worth of nursery stock for the best box of Jonathan apples grown in Oregon.

J. B. Wagner, nurseryman at Pasadena, California, again gives as a prize \$50 worth of Burbank Crimson Winter rhubarb, and the trustees are considering awarding this prize in a contest among the housewives on apple pies.

German Nurseries & Seed House, of Beatrice, Nebraska:

"We would like to donate a special prize for your apple show and will give 200 Campbell's Early Grape, two-year, No. 1 plants. You may offer the prize in whatever class you desire. We hope you will make the third National Apple Show a complete success."

Oregon Nursery Company, Orenco, Oregon:

"It affords us pleasure to be permitted to donate our share toward the prize list of the third National Apple Show. If sanctioned by your committee, we should like to give 300 apple trees to the winner of the most first prizes on box exhibits, 100 Vanderpool Red apple trees to the winner in this variety, 50

Vanderpool Red apple trees as a second prize and 100 trees (winner's choice) to parties winning a prize on any trees bought from our nursery."

Richland Nursery Company, Richland, Washington:

"We are willing to donate 500 No. 1, one-year apple trees, to be used as premiums at the National Apple Show. You may place them in any class desired."

Milwaukie Nurseries, Milwaukie, Oregon, donates 50 cherry trees, 50 pear trees, 75 peach trees and 25 prune trees, and regrets that they have no apple trees in stock, but promise more for next year.

Shenandoah Nurseries, Shenandoah, Iowa, offers 1,000 Concord, two-year grapevines, 5,000 No. 1 apple seedlings and 5,000 No. 2 apple seedlings.

Mount Arbor Nurseries, Shenandoah, Iowa, gives 100 B. de Anjou pear trees, 5,000 apple seedlings and 100 Bing cherry trees.

New Haven Nurseries, New Haven, Missouri, offers 400 apple trees and 100 peach trees to the winner of the five-box Jonathan contest.

Carlton Nursery Company, Carlton, Oregon, donates fifty Royal Ann cherry trees as a premium on the best box of Yellow Newtown apples.

THE fruitmen and the citizens of Sacramento want to meet you at the convention, February 15 to 18, 1911. You will enjoy every minute while in the city. We are now preparing to give you a royal welcome. Don't disappoint us, we want to meet you personally and hear your advice and opinions on many important subjects that are to come up at this gathering. Accommodations have been arranged for—we will meet you at the Union Depot.

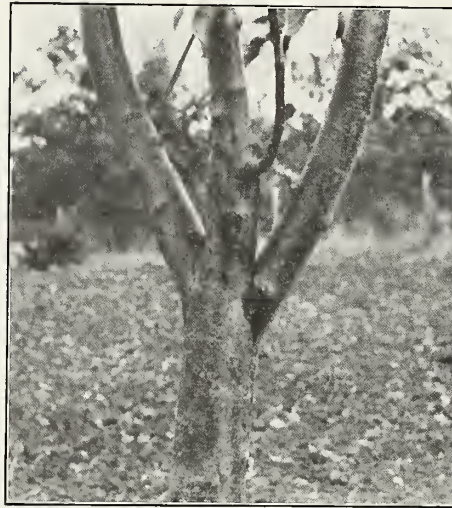
Sincerely,
Sacramento.

CONTROL OF PEAR BLIGHT ON THE PACIFIC COAST

BY P. J. O'GARA, ASSISTANT PATHOLOGIST DEPARTMENT OF AGRICULTURE

THE germ causing this disease is named by bacteriologists "Bacillus amylovorus." For our purpose of discussion we may call it the pear blight bacillus, the pear blight germ or the pear blight microbe, all these terms meaning practically the same thing. These germs are among the most minute of living things. Bacteria or germs are vegetable organisms and are as truly plants as trees, grasses, etc. However, they are very low down in the scale of the vegetable kingdom since the individual organism consists of a single cell, which may be elliptical or rod-like in form. They multiply by lengthening a little and then pinching in two. This is the only way in which they may increase their numbers. This process can take place within half an hour or less, and this I have proven by observation in a hanging drop culture under the microscope, although they are extremely minute they may be measured by means of microscopical apparatus. The standard of measurement for these minute objects is the micromillimeter, and a millimeter is about one twenty-fifth part of an inch. The pear blight germ is from two-thirds to three-fourths of a micromillimeter wide, and from one to one and one-half micromillimeters long when it has reached its mature stage. As another illustration showing their minute size I may say that if 25,000 pear blight germs were placed end to end they would scarcely measure an inch in length. Curiously enough, the young germs are longer than the older ones. When they are growing rapidly their development in length goes on more rapidly than their division. This germ forms no spores, and for this reason can not live over the dry season, as do the germs of anthrax which form spores. The pear blight germ is very sensitive to drying

and, in fact, is a very short-lived germ. The fact that it does not form spores is highly important, as spore-forming bacteria are capable of living over in dust which may be blown about by the winds.



Spitzenberg infected with pear blight. Note the two streams of ooze running down the body. (Original photograph by the author.)

The germ dies rapidly in the blighted tissues, as soon as the tissues have become fully killed. It cannot withstand drying, usually dying within two weeks or so. It is killed by exposure to direct sunshine in a very few minutes, usually not more than ten minutes unless protected by the bark or twigs. It rapidly dies when it is washed into the soil, since it can no longer get the necessary food for its existence and multiplication. In fact, the pear blight germs disappear and die very shortly after they are exuded or washed out by the rains from the twigs and branches. It also dies when the blighted bark dries up. It can only live along the advancing margin of the disease in the thick, fleshy bark or cambium which has been invaded by the bacteria, and which does not have time to dry out until the cool weather approaches. The thick bark of the large limbs, branches and root system remains moist during a long period, especially in the winter. By this method, the importance of which we will show later, the germs are able to carry over, or live over, from one season to another. As a matter of fact, it is only by this means that the pear blight germ can live over during the dormant period of the trees. The germs are killed by high temperature, they are wholly destroyed when subjected in liquid culture to the temperature of 55 degrees Centigrade for ten minutes. They are wholly uninjured, on the other hand, by any degree of cold. Temperatures of 40 degrees Fahrenheit below zero have no effect whatever. They may be found to be frozen at this temperature, but thaw out immediately when plunged into warm water and go on with their activities uninjured. Cold retards their development, but it also prolongs their life. Like other vegetable organisms, cold storage has the effect of

CONTINUED FROM AUGUST EDITION

prolonging life over a long period of time. In the laboratory the organism lives for a relatively short time at room temperatures, while if the cultures are put into the icebox the germs may live for months providing the culture medium does not dry out.

In the life cycle of this germ, blossom blight may be considered as the first step, at least, this is the first step in its life cycle that is noticed by the casual observer. For a long time it was a great puzzle where the germs came from that produced the first blossom blight in the spring of the year. This one link in the chain, where the germs remained during the dormant season, was missing. No one knew how the first blossoms became infected. Given a number of blossoms infected, it was comparatively easy to discover the methods by which the germs were carried about. Not only in natural infections, but in those artificially produced with pure cultures, insects were found visiting the blighted blossoms. The germ multiplies in the nectaries of the blossoms as readily as it does in a culture medium, since the nectar glands exude a sugary solution which furnishes the organism, the necessary food supply. The enzyme or ferment given off as a by-product by the germ dissolves the delicate cells beneath, permitting the germ to pass downward with the greatest of ease. Ordinarily, the entire pear tree is sealed up with an air-tight and water-tight cuticle composed of a thin layer of the same composition as cork. Even the breathing pores are plugged up during the dormant season of the tree so as to prevent evaporation from the tissues. This cuticle keeps out the pear blight germ unless it is injured or broken. The nectary is not covered by cuticle and is, therefore, an easy place



Wrong form of pear tree. The central leader renders it difficult to eradicate or control blight. The open head is the proper type of tree. (Photograph by the author.)



The result of growing a tree with the central leader. Blight infection made it necessary to remove practically the entire bearing area of the tree. The limbs left are too long and weak. (Photograph by the author.)

for the germs to enter. The gummy exudate pushes out of the infected blossoms adding to, or even taking the place of the nectar; and honey bees, wild bees, wasps, flies, and perhaps fifty other species of insects visiting the pear blossoms or apple blossoms carry the germ-infected material. When once the insects' mouth parts and feet are infected, blossoms which it visits thereafter become, in turn, infected as the insects drop off a few germs into the nectaries. The blight virus being also a sticky material and usually requiring a considerable mass, speaking from the microscopic standpoint, to produce infection, is not blown by the wind. Of course, the negative of such a proposition is hard to prove conclusively, but experiments have been made to decide this matter by covering blossoms with mosquito netting along the side of artificially infected flowers, and it was readily found that the uncovered flower visited by insects contracted the blight, while those covered by bags, mosquito netting and other material which kept out insects remained free from the disease. Occasionally, a humming bird visits the infected blossoms. This has been observed in a number of instances. Doubtless, birds get the gummy material on their feet and carry the blight long distances. However, we look upon insect distribution as by far the most immediate means of infection, especially in blossoms; in carrying the blight from flower to flower, tree to tree and orchard to orchard, although doubtless occasional long distance distribution is accomplished by birds or some other agencies, including man himself. After the blossoming period is over, or even before it is entirely finished, blight may be found attacking the tender twigs. Our common insects have been found to be active agencies in not only the distribution of the disease, but in puncturing the tissues

and thereby introducing the germs into them. While it is easy to prove that insects cause some of the infections of some of the twigs, it is not absolutely certain that they do all the inoculating. Twigs are sometimes found with blight



A bad crown infection on Spitzenberg apple, due to water sprouts. Poor attempt at working out the infection. Note ooze running down the body above the part cut out. (Photograph by the author.)

started in the axils of the leaves or in the tender bark where no punctures can be found on careful examination. It is possible that the germ may enter in damp weather through growth cracks where the cuticle is ruptured, exposing the tender tissues.

That insects really carry pear blight germs on their feet and mouth parts, I have proved by capturing these insects in infected orchards and allowing them to walk about on prepared culture plates known as Petri dishes, which contained a substance in which germs might make growth. In from 24 to 48 hours colonies of germs would be found growing from the points where the insects walked upon the culture medium. By inoculating growing shoots from these cultures, typical cases of blight were produced.

In the numerous experiments which have been made atomizing the germs on the tissues, it has resulted in a failure in most cases, except where punctures through the cuticle have been made by a pin point, or where by the breaking of the leaf or some slight abrasion the skin has been ruptured, allowing the germ to enter.

There are, therefore, two main methods of entry by the germ. First, in the nectar of the blossom, and, second, the tender tips of growing twigs or water sprouts. Blight occasionally enters by the third method—directly into the tender, growing, fleshy bark, through growth cracks, although as a general rule this method of entry is comparatively rare. Sapsuckers or woodpeckers become infected by puncturing cases of holdover blight, and afterward visiting healthy

trees produce blight infection in them. We have several observations along this line, and doubtless many more occur in nature. It is even possible for the whiffletrees or implements used in cultivation to transfer the infection; pruning tools are certainly a very frequent cause of transmitting the disease, especially during the growing season.

Mr. Waite states that in Maryland he saw a nursery block of 10,000 Bartlett pear trees completely destroyed by blight. This block, as was determined by the specimens, carried actual samples of holdover blight in the stocks. When stocks were cut off above the dormant buds in the spring, the pruning tools became infected and the disease was transmitted to nearly every tree reached by the pruner. Instead of the buds pushing up, the cut surface began to gum and blight. The writer has seen in certain nurseries in Nebraska many cases where nursery infection has been brought about through the use of tools which have been used in cutting out blight infection in large orchard trees, without previously disinfecting them. Pear blight behaves in all sorts of irregular ways when it runs down the limbs and branches. Occasionally a fruit spur blighting causes the disease to spread in a circular spot an inch or two in diameter on the branches. More often it is an elliptical spot extending lengthwise of the branch. It may run down in a long line from the lower edge, making it very difficult to save the branch or even the tree by cutting, on account of this narrow strip of the disease. It is almost impossible to anticipate the variations in behavior of the disease, because it depends upon so many different factors. It may be well to point out some of the factors controlling the habits of the disease in order that you may see how varied are the influences controlling it.

These factors may be divided more or less completely into two sets. First,



Bartlett pear tree showing the blight eradicated from the body. It was necessary to cut part of the root system away. This tree is capable of bearing a normal crop.

(Original photograph by the author.)



Crown gall on branch of Spitzenberg apple, showing pear blight infection. Note the ooze coming out both sides of the crown gall.

(Original photograph by the author.)

those which govern infection, and second, those which determine the spread of the blight in the tree after infection.

The first factor is the presence of the bacillus. The pear blight germ must be present in the orchard or must be carried there during the season in order to have the blight. No matter how favorable the conditions may be, unless the germ is there the disease cannot develop. The immunity of California and Oregon orchards up to recent years, of course, is attributed to the fact that the germ was not there. The second factor is the number of insect visitors. We have pointed out that insects carry the blight about. The honey bee is one of the most active in carrying the blight on the blossoms. Other insects visit the pear and apple blossoms and carry the blight very widely. The presence of some certain species of insects as already suggested, has been the means of introducing the blight into the twigs and branches or bodies of the trees. Not only must the insect be present and the germs there for them to carry, but the weather conditions must be favorable for the activity of the insects and to bring the trees into proper condition for infection.

Flower-visiting insects usually like sunshiny weather, especially sunny weather following a moist season, which allows many kinds to hatch out or develop from the pupa. Young orchards are not usually attacked by the blight, rather rarely in fact, until they have blossomed, unless there is a bad attack of blight in a pear or other pome fruit orchard near at hand. There are some cases of young orchards which I have seen in California and Oregon that have blighted somewhat seriously before they had bloomed, but they were alongside badly blighted pear orchards. The presence of water sprouts or spurs from the French stock, on which pear trees are mostly budded, often determines

infection. In many localities the entire loss of the pear orchards has come through the infection of water sprouts and spurs coming from the crown or roots of the trees. Perhaps 90 per cent



A bad infection in the body and root system. Only a small part of the root system left. This tree will continue to bear fruit. (Photograph by author.)

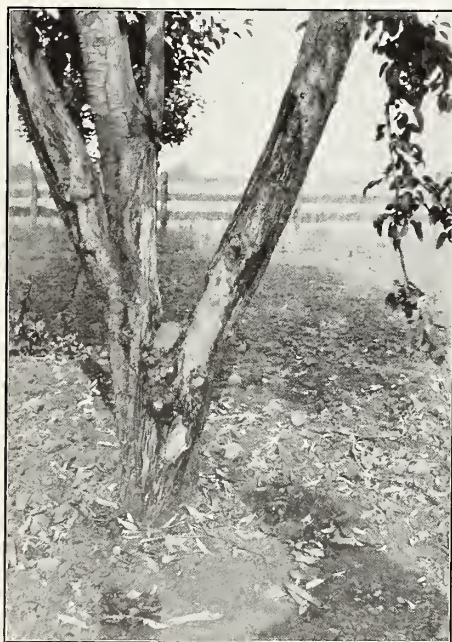
of the loss in many of the river orchards in the Sacramento Valley has come about through this sort of infection. Right alongside of orchards which have been seriously damaged through the infection of water sprouts from the stock or roots we found thrifty trees which were budded on Le Comte, Winter Nelis and Kieffer roots; these have not gone down with the disease through their ability to resist the blight. It has been particularly noticeable that Winter Nelis roots are very resistant to the blight. Cases have come under my observation where the bodies have blighted as far as the union with the Winter Nelis stock and then stopped. If this experience proves universal, it is a strong argument in favor of using the Kieffer and Winter Nelis stocks on which to graft the more tender varieties. Furthermore, these stocks have a less tendency to throw out sprouts.

Several conditions or factors control the spread of the blight after it once enters the tree. Some of these are more or less connected with the conditions favoring infection. The vigor of the tree has a great deal to do with the amount of damage produced after the blight once enters it. Another fact which must be borne in mind is the variety of tree, whether apple or pear, or any other pome fruit. All varieties are not equally susceptible under similar conditions, there being in many varieties a certain tendency or immunity. The more vigorous

and thrifty the tree, as a general rule, the more seriously it is attacked by the blight. The vigor itself is the effect of various conditions, such as the fertility of the soil, the amount of manure or of fertilizer used, or kind of cultivation, of soil, moisture, rainfall or irrigation, and the presence of other diseases, such as leaf blight, crown gall, root rot, etc.

As a rule, trees on rich soil blight more readily than trees which are on poor soil. There are some apparent exceptions to this, and there is a difference in the behavior of blight on different soils in connection with their fertility. Alkali soils seem to favor the blight more than correspondingly fertile, or even more fertile soils that are not alkali. On the other hand, trees may blight on the acid soils of the Eastern states. Stable manure causes the trees to be more susceptible to the blight than those not manured. The age of the tree also exerts an important influence. The older and slower growing the tree is the less it is attacked by blight, other things, of course, being equal. Exhaustive crops of fruit tend to consume the food material of the tree and help to check the blight to a certain extent. On the other hand, when the trees fail to fruit from unfavorable conditions, such as prolonged rains at the blossoming period, there may not be the opportunity for infection and the contradiction to this principle may be observed. From observation, orchardists know that during rainy and cloudy weather insect visitors, such as bees, are very rarely found working in the blossom. Since the bees are the principle distributors of the blight germs, it can be readily seen that if the entire blossoming period is covered by rainy or cool weather there is little chance for very serious and general infection, although there may be considerable holdover blight in the vicinity of the blooming orchards.

The style of pruning the tree exerts some influence, not only in the behavior of the blight, but also on the convenience of the orchardist in eradicating the disease. The least desirable form of a tree is the tall pyramid, having a central leader with the fruit spurs on the main trunk and water sprouts at the base. In this form of tree, any infection of blossoms or sprouts readily goes into



Body infection of Bartlett, due to water sprouts. First attempt to eradicate the blight unsuccessful, and it was necessary to peel the bark and cambium at a greater distance. (Photograph by the author.)



BEFORE WATER IS APPLIED IN THE YAKIMA VALLEY WASHINGTON

the body, making it difficult to eradicate the blight without practically destroying the tree, or, at least, removing the principal bearing area. The most desirable form is the broad vase-formed tree, clean and free from water sprouts at the base, having no fruit spurs near the main trunk and leaders, and having lateral twigs for fruit bearing at as great distance as possible from the crown of the tree. Such a tree is also in a very desirable form for other reasons, for it is easier to spray, easier to prune after the top has been formed, easier to gather the fruit, and especially easier to examine and keep free from blight.

The weather at critical times, especially in the spring and summer, exerts an important influence on the spread of blight. In fact, the weather influences dominate more equally the infection than they do the spreading of the blight in the trees. We recognize certain spells or weather conditions as infection periods, and by following carefully the relation of the blight to the weather the intelligent fruit grower soon learns to anticipate these difficulties. In fact, it is supposed by many that the long, dry, hot summer of the Western states, especially the Pacific Coast states, gives such poor opportunity for pear blight that it was not able to exist under the prevailing conditions. Of course, we now know that this is a fallacy, for, as soon as the germ was introduced, it produced the disease abundantly. Dry sunshine, while favorable to the orchards, tends to produce a firm, healthy growth of the tree and prevent infection periods. However, constant and intense sunlight produces another result which may be noted here. Pome fruits, as well as other fruits, under the influence of dry, but sunny weather, carry on their processes of growth and assimilation in the very best possible manner. The study of blight throughout the West shows that where irrigation is used on the one hand, and where there is a natural supply of water on the other hand, and where the orchards are fairly well supplied with water and kept in a continual state of high nutrition by the perpetual and uniform sunshine, the trees are peculiarly susceptible to the disease. In the lower Sacramento Valley in California and in the Rogue River Valley where irrigation is not resorted to, we find that there is a great deal of soil moisture, and in many favored spots, the water table is only a few feet below the surface of the ground. Under proper

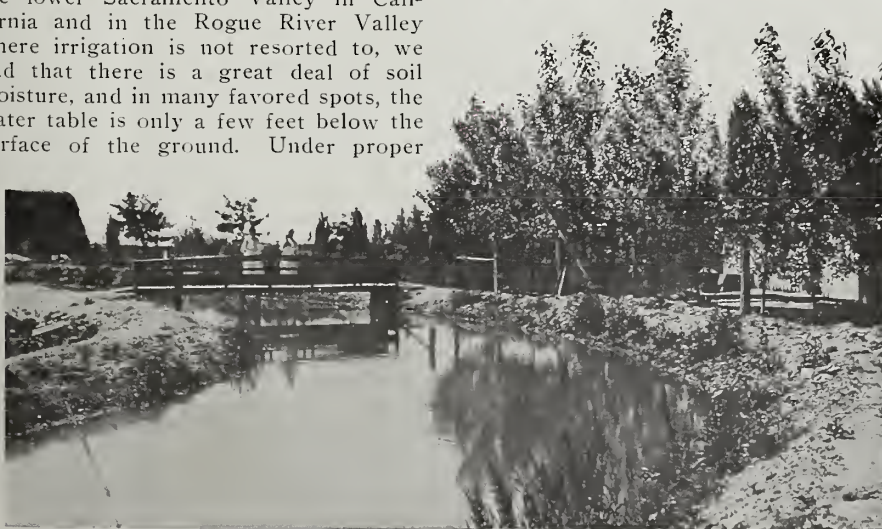


IN THE TIMBERED SECTION OF SOUTHERN IDAHO
FINE FISHING AND HUNTING

cultivation, where a dust mulch prevents evaporation of the soil moisture, we find that during even the driest seasons the roots of the trees are amply supplied with water. On the other hand, we also find places where the water table is too near the surface, and in this case the trees are in a drowned condition; consequently, perfect assimilation does not go on, and for this reason, such trees, although situated in rich, nitrogenous soils, do not blight badly. Where the trees are growing at their best, the blight germ feeds on the rich sugars and starches in the sap, so that the conditions which favor the growth and production of the fruit, also tends to favor the germ; for we must remember that the germ is itself a plant, depending upon the rich food supplied by the tree for its best growth. The fleshy bark of trees grown under constant sunshine, especially those of the Pacific Coast, seem to be richer and thicker than in the

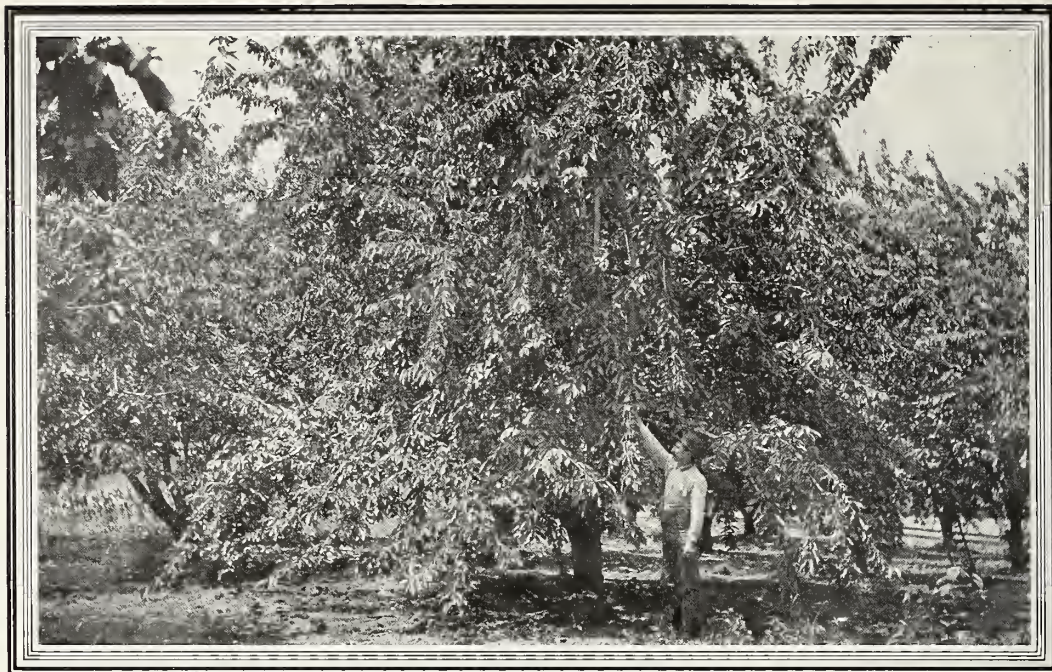
Eastern states, and naturally affords an unusually good feeding ground for the pear blight bacillus. This rich, fleshy bark also tends to hold over the germ during the dormant season in a much more serious way than the thinner bark of trees grown under other conditions. Cloudy, rainy weather, therefore, while favoring infection, sometimes results in a starved condition of the tree, which, of course, is especially unfavorable to the pear blight germ. Trees grown so as to produce a minimum growth naturally are short of plant food, and, of course, do not favor the pear blight germ, even though it should enter the tissues. Every physiologist knows that in order that a green plant may form starch in its foliage the action of sunlight is required. The more intense the sunlight the more rapidly the formation of starch goes on. In cloudy, dark weather very little starch is made, or elaborated in the leaves. Of course, we know that the tree does not make use of its starch as such, but, through the action of a diastatic ferment or enzyme, the starch is changed into sugar, which is translocated to all parts of the tree by osmotic action; that is, through the sap. It is this rich sap, which is mostly sugar, that the pear blight germ feeds upon. The more sugar, the more intense the destructive action of the germ. The very regular growth of the trees in the Rocky Mountain and Pacific Coast orchards tends to keep the pear blight germ continually at work, unless checked by prompt and thorough eradication. In the Eastern orchards, especially with dwarf pears, which make their growth early in the season, a heavy rain, if accompanied by a day or two of cool, cloudy weather, will cause the trees to close up their terminal buds.

Before leaving the chapter on weather conditions, it may be well to point out



IRRIGATION CANAL NEAR CALDWELL, IDAHO

more fully the reasons why serious outbreaks of blight occur after showers or thunder storms. It has been the common belief that static discharges of atmospheric electricity have a considerable influence upon such outbreaks. This, of course, is mere fancy and has no scientific significance whatever. Everyone knows that a seed planted in dry soil cannot germinate unless moisture is applied to it, either artificially or naturally. Now, supposing a thunder storm comes along with a heavy precipitation, or at least sufficient precipitation to moisten the soil about the seed; what happens? The question is so simple that a child in the primary grade would not hesitate in answering it. Of course, the seed starts into growth, the rapidity of its growth depending upon the temperature following the rainfall. Now, was it the rainfall or the thunder and lightning that caused the seed to germinate? No, the rainfall and the warmth, and nothing else. It has been explained that a germ or bacterium is also a plant-dependent upon moisture and heat for its growth. In a dry season an enormous number of infections may take place, but the very fact that the season is dry and warm accounts for the fact that these infections fail; just the same as in a very dry season a very large percentage of corn, or any other seed put into dry ground, will fail to germinate and we have an occasional plant coming up, just as we find in the case of blight, only a few infections appearing. Everybody knows that after a rain every vegetable starts into rapid growth providing the weather is warm. Now, rapid growth in a pear or apple tree means nothing more or less than an enormous addition of water, plus food from soil and air to it. Here we have conditions favorable to the growth of



IN THE SHADE OF THE OLD CHERRY TREE, AT CRESWELL, OREGON

the blight germ which uses the pear or apple as its soil from which it draws its water supply and its necessary food; namely, starch and sugar. Just preceding a heavy rainfall, the germs may have been distributed very widely. Had dry weather continued the fact that the germ had become widely distributed would not have become apparent because countless infections would not have taken. In very dry weather, the nectaries of blossoms soon dry, and unless germs have gained a strong foothold before drying takes place no apparent infection results. The above explanation should suffice to show that the thunder and lightning theory has no bearing whatever on the disease known as pear blight. Consider the germ in the light of a seed whose germination is dependent upon the same ecological conditions for all of its growth activities.

To one who knows something of the theory of the disease, the matter of eradication often seems very simple. It is usually a very easy thing to write about the experiences of others and to tell in considerable detail how blight should be eradicated and controlled. The actual field work is very difficult and tedious, and a matter of days or months of training only will make an expert field man. No one can become expert after a few hours' work, even under competent instruction given by a trained man

having had years of experience. We do find people, however, who are able to write and instruct without having had any experience whatever. To the initiated, as well as the uninitiated, let me say that the eradication of pear blight is one of the most difficult problems known to plant pathologists. Let no one say that it is a simple thing. It is difficult, very difficult. The reason for this difficulty is that we are dealing with a considerable amount of ignorance and unbelief; again, few farmers who have not had a bacteriologist's training, realize the peculiar relation existing between the organism causing the disease and the host of plants. They fail to see that this relation is practically the same as that which exists between the germ of tuberculosis and man. On the one hand, antiseptic precautions, and the removal of infections seems unimportant; on the other hand, however, long experience with this dread human disease instills a sort of fear, even though the true cause may not be fully comprehended. If every fruitgrower could be made to feel that fruit trees are living things very much in the same sense as themselves, and that the parasites attacking them should be viewed in a corresponding light for both, I am sure the whole matter of education would be solved.

The treatment for pear blight, or rather the methods for controlling it, may be divided into two classes, primary and secondary. The primary method of treating this disease consists of cutting out thoroughly and antiseptically the hold-over blight during the dormant season of the trees—that is, during the fall and winter. It has been explained that the hold-over blight may be found in the larger limbs, the trunk and even the root system. These hold-over cases have become such through the various means of infection pointed out in a previous chapter, namely, through blos-



GROUP OF EMPLOYEES AND HORSES WORKING ON THE UMATILLA, OREGON, GOVERNMENT PROJECT

soms, buds or water sprouts, which have become infected and through which the blight has gained entrance to the fleshy bark and cambium of the bodies and roots. The other methods of entrance, as pointed out before, are through growth cracks, crown galls, insect and bird punctures, or any other way by which the epidermis may be broken so as to expose the tissues beneath. It has also been shown that the pruning knife or other orchard instruments and implements may be the means of spreading the disease. If the work of removing hold-over cases is done thoroughly it leaves no opportunity for additional advantages from any other secondary method to be given later.

Remember that the important thing is the removal of the source, or what will be the source of infection the following year. In the case of the pear or apple is is important that this work be done as skillfully as the work of a surgeon in removing a member infected with blood poison. Everyone realizes the attention given to the source of a city's water supply, and it may be said that the death rate is very largely an index of its condition. In the same sense, the attention given the sanitary conditions of the orchards of any community is an index of the death rate of the orchards. Of course, the cutting out of hold-over blight must be done, not alone in a single orchard, but the work should be general and thorough throughout the entire area, such as an inclosed valley or even, for better work, an entire state. Complete eradication of pear blight from such a large area is, of course, very difficult, but not impossible. However, the fewer hold-over cases that may be missed will result in fewer cases of infection later in the spring and summer. As may be seen by referring to the factors influencing the disease, the presence of the germ is of primary importance. If the



PICKING STRAWBERRIES AT CRESWELL, OREGON

pear blight germ is not present in the orchards there can be no blight, no matter what the weather conditions may be. The orchards of California existed for twenty-five years with varying climatic conditions, and no one ever heard of blight in those orchards until the germ was introduced.

The regular development of the disease has been pointed out by which it runs down on one side of the limb or body and not on the other; this often leads to failures in eradicating the blight from orchards. While the disease in the top is very easy to handle and anyone who looks at all closely cannot only detect it, but can readily remove the infected branches; the disease on the bodies and in the root system is not only hard to see, but it is often difficult to find it, especially on old trees where the crowns and bodies are covered with rough bark. It may be said here that the removal and the detection of hold-over in pear trees is not nearly so difficult as is the case in the apple and the quince. The Spitzenberg apple is probably the worst variety, if not the worst species of the pome family, in which to detect hold-over and to effectively remove it.

The gum exudate, when it is present, gives a clue to many otherwise obscure cases. However, in cases of late fall and summer infections, the lesions may be so small as to produce no exudate

or give any other evidence of infection. A dead water sprout or fruit spur, no matter how tiny it may be, leads to the detection of a case. Sometimes these have been broken off in cultivation or carelessly cut off without following up the infection at the base. Very often a water sprout which has come up from the root system at some distance from the base of the tree, becomes infected, and is later removed by cultivation; but the infection passes on up the infected root, finally involving the entire root system. Sometimes there is infection without a water sprout or bud at all, and such cases are the hardest to detect unless some ooze has exuded. Such infections come about through insect punctures and growth cracks by means of which the germ has been introduced. Where there is a large amount of blight to be removed from the orchard, necessitating a great deal of labor, it has proven necessary in every case to go over the orchard critically, or perhaps we may say leisurely, on a dry, sunshiny day when there is good light, and find the few cases that have been missed on the first inspection. No matter how thorough the work, this careful method of inspection has proved extremely important. Not only should the work be inspected immediately following the general clean-up, but someone else with keen, well-trained eyes should look over the trees several times during the winter. A special effort should be made to find out when there is a new exudation of ooze. This may follow any warm, mild spell in the winter, when there is a wide range between the day and night temperature. Such conditions are known to affect the flow of sap in the sugar maple and other trees. A final inspection should be made just before blossoming time to catch any hold-over blight the last moment, in case it has been overlooked before.

After the blossoming period has passed so that the blight has had time to



CONSTRUCTION OF THE BIG SPILLWAY, UMATILLA, OREGON, GOVERNMENT PROJECT

develop, if a colony of blight is found in the orchard, careful examination of this colony will generally result in the finding of a case of hold-over blight in the center and from which all trouble may be traced. During the first year's work, those who are just learning how to eradicate blight will probably miss a good many cases; however, after practice, they usually become keener and rarely miss any. In fact, I have seen men who from the very first were able to do excellent work, but, like other jobs which require careful work and a sharp eye, relatively few men are capable of making first-class inspectors. In many of the large orchards where the question of efficient labor is serious and where all sorts of tramp and other low-class labor has been employed, absolute failures in blight control have generally resulted. As I have stated before, a tramp, or, for that matter, even the better sort of laborer, cannot be thoroughly schooled in careful work of this kind within the space of a day or two. In every event, the best and most careful men should be placed in charge of work of this kind. It is almost needless to say that the breaking up of the larger tracts into smaller ones of, say, five or ten acres, will largely solve the problem of blight control. When this is done each tract will have close, personal supervision, and the details of eradicating the blight, as well as keeping it under control, will fall to the owner. It is a common mistake to think that the matter of eradication and control rests with the inspector alone. An inspector must have the co-operation of the entire district. I do not know of any one who would ask an inspector to assume the matter of cultivation, pruning or any other of the regular orchard practices; so why should an inspector be asked to do the actual work of blight eradication?



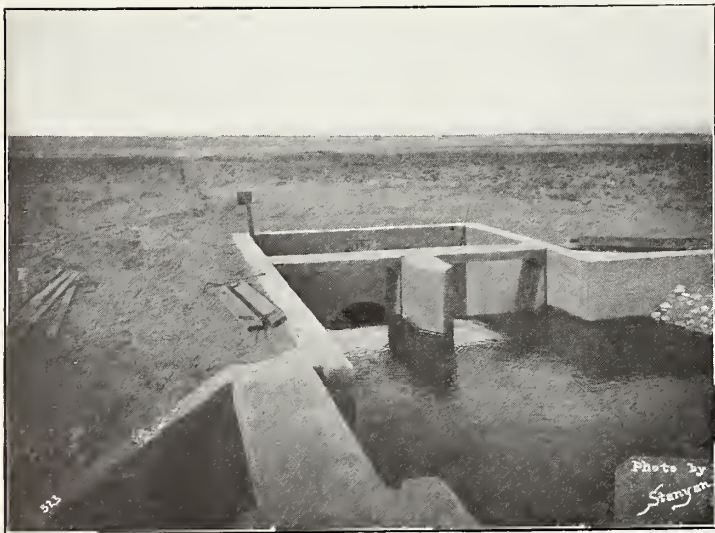
DR. L. D. SCARBROUGH IN HIS 160-ACRE PRUNE ORCHARD AT CRESWELL, OREGON

The inspector is, in the first place, an instructor, and in the second place, the one to enforce the horticultural laws, but he is no common hired man.

It must be understood from the very beginning that there is not spray-cure or remedy for blight. Being a bacterial disease, and once the germ has gained entrance to the bark tissues and the cambium layer by any means whatever, it can readily be seen that any external application in the way of a spray or wash could not be effective. There is but one thing to do after infection has started, and that is to remove, by cutting, the affected parts. In other words, the operation is purely surgical. In all of the cutting a strong disinfectant should be used to wipe off the tools after cutting into the blight as well as to wash off the wounds made by the instruments; otherwise, it is possible to introduce the germ into the cut surface and to carry it from tree to tree on the pruning tools. In the majority of cases, in dry weather, infection would not result from the use of pruning tools, even though they were not disinfected, but it is never a wise plan to take a chance. In the late summer or early fall, when the exuberant growing season is over, the chances for infection by the use of unclean tools are not so great; however, it has been determined by numerous experiments that blight

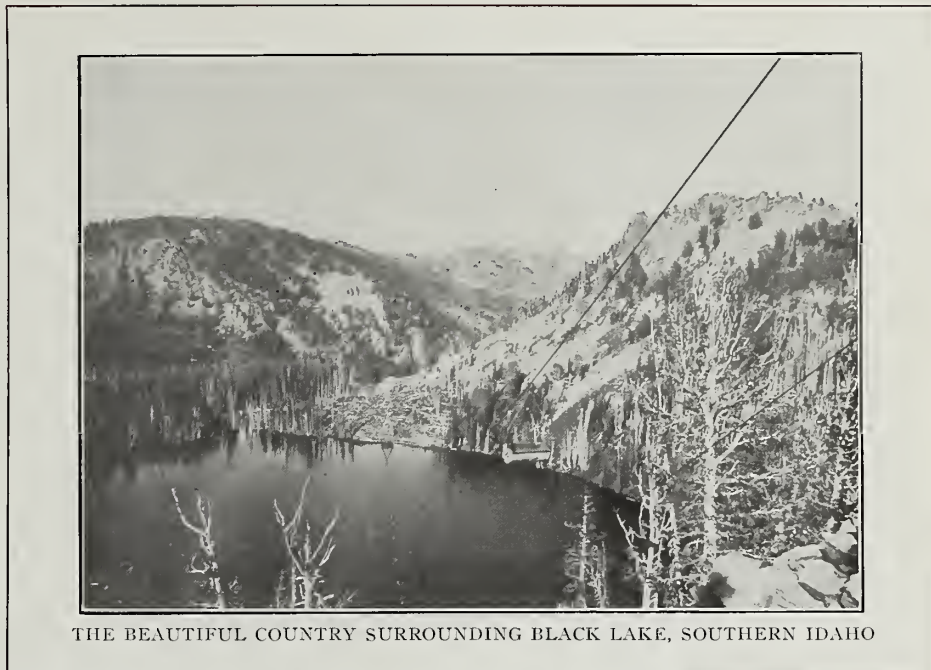
punctured into the fresh bark in the fall may remain semi-dormant through the winter and may result in a fine case of hold-over blight the following spring. In working out blight as much care should be used to prevent accidental inoculation and infection as a surgeon would use in performing a major operation.

For disinfecting the cut surfaces and the instruments, the best thing to use is a solution of corrosive sublimate, or bichloride of mercury, in water, one part to one thousand. It is often advisable to use the disinfectant a little stronger, and there is no danger in using one to five hundred. Tablets may be obtained from any drug store, and the number to be used to produce any strength of solution is usually indicated upon the bottle. To be sure that no mistake is made, ask the druggist how many tablets to use to produce a solution of desired strength. When possible, use rain water, as the slightly alkaline waters in dry countries tend to precipitate the poisonous mercurial compound. Also use a glass or non-metallic container, as a tin can or other metal container may react on the disinfectant, and remove the poisonous principle. Corrosive sublimate kills the pear blight germ in solutions in water when it is diluted to one part to 10,000; therefore, the above formulae are sufficiently strong and well within the limits. While there are other disinfectants which may be used, bichloride or mercury is far the cheapest, and there is nothing gained by using anything else. The use of kerosene, gasoline, and such like, is certainly not permissible. Even carbolic acid is distinctly inferior to corrosive sublimate and, besides, its noxious smell and burning tendency do not warrant its use. It must be remembered, however, that corrosive sublimate is a deadly poison when taken internally, and the bottle or container should be plainly marked poison. Applied externally to wounds, or upon



HEAD PIPE LINE "M," FORTY-EIGHT INCH REINFORCED CONCRETE
UMATILLA, OREGON, GOVERNMENT PROJECT

the hands, it will cause no injury, but, on the other hand, will as readily disinfect as in the case of the tools and cut limbs. The greatest care should be taken in emptying the bottles containing the solution when returning to the house, or otherwise keeping both the bottle and solution away from children or unsuspecting persons. As indicated before, there is no danger in getting the solution on the hands; in fact, a cut or wound should be treated with it to prevent bacterial infection which might result in blood poisoning. It should be understood, however, that the bacteria of pear blight are not pathogenic to man; that is to say, the germ can produce no evil effects even if introduced into the human system. It is a good plan to use a sponge, which, if fastened by a string about two feet in length and tied to one's clothing, is always handy when it is necessary to wipe the pruning tools and the cut surfaces of trees. Some operators tie the sponge by a very short string to the wrist, and this is probably the most convenient way to use it. An inch or three-quarter-inch carpenter's gouge is also an excellent tool in the makeup of a worker's outfit. With it a small chip may be taken out of the rough bark in inspecting large trees, and, besides, it is a very handy tool in working the blight out of difficult places where ordinary tools cannot be so easily used. In inspecting large trees, whether apple or pear, the gouge must be used to examine the bodies and the crowns. Unless this is done, cases of hold-over will certainly be missed. In large, rough-barked trees, a chip should be taken out at intervals of about two inches all around the crown, as well as higher up on the body. It is not necessary to go below the outer layer of soft bark tissue, and it is quite unnecessary to cut as far as the wood. When the chip is taken out, if the bark tissue presents a water soaked appearance, or if it is of a red or perhaps bright red color, it is almost certain that the body is infected. When a point of infection is found, it should be followed up so as to



THE BEAUTIFUL COUNTRY SURROUNDING BLACK LAKE, SOUTHERN IDAHO

determine the extent to which the infection has run. If careful work of this kind is done, no hold-over will escape detection.

It is a good plan, when ignorant pruners are in the orchard, to make them disinfect in the general pruning. As a rule, I would suggest that eradication of blight precede the general pruning. A special set of skilled help should do this work, then the ordinary pruner may follow. Even in ordinary pruning it is a safe plan to disinfect when leaving each tree in order to avoid carrying the disease in case the pruner has cut into an overlooked case of the blight. There is a question as to what to do when the blight is found running down the bodies and into the roots of the trees. Where the disease occurs on limbs it can be readily sawed off, as the removal of even the greater portion of the twigs and the branches by no means entirely destroys the value of the tree. The tree will push its new top vigorously, and in two or three years be in full bearing again. Where the blight has run past the main forks, however, a serious question is involved. Where inefficient, unskilled labor has to be used and where there is but little blight to work out, we advise pulling out all trees where it has run down the bodies, or has infected the root system. Many growers, when the matter is explained to them, condemn such trees and root them out, and thus, of course, simplify the matter. On the other hand, it is

possible to effect an eradication of the blight by carefully cutting out the bark, and even the discolored wood, entirely beyond the limits of the infection. An inch or two at the side, and three to six inches at the bottom and top of the infection, may be regarded as safe if done during the winter. However, such cutting will not do during the spring or summer when the sap is flowing rapidly. This work invariably results in missing many cases. It is never a good plan to leave the matter of working out hold-over blight until after the sap begins to flow; the best time to do this, and do it successfully, is during the dormant period. However, I do not mean to say that hold-over may not be removed at any time, but I do mean to say the chances for a successful operation are very much less, and the amount of cutting necessary is always much greater and more destructive to the appearance and health of the tree. As a general principle, we believe in drawing the line on those cases where the blight has gone below the crown and into the root system. Even here, however, it is possible to dig away the soil and follow up the blight on the roots. A tree should never be considered as wholly lost where skilled labor may be had, and where the body is not completely girdled or where the root system is not too badly involved. Where a large portion of the bark must be removed from the body, leaving only a small portion to carry sap, bridge-grafting may be resorted to, to fill in the part cut away. If this is well done, and if the bared wood has been protected by a white lead paint, a new bark covering may be grown. This has been done in a very successful way in several instances. In case the tree has set a heavy crop of buds for the next year, this plan will eventually help to carry the fruit crop.

In case a part of the root system, as well as the bark and cambium above, must be removed, the parts removed may be eventually filled in by planting good



DISPLAY OF VEGETABLES FROM THE BENCH LAND EAST OF BAKER CITY, OREGON

young trees from the nursery row, setting the roots well down and grafting them into the healthy tissues above. These trees will tend to grow together and finally fill in the portion cut away. Care must be taken, however, that the thrifty sprouts from these young trees do not become affected with blight.

Summer cutting intelligently applied may do a great deal of good in saving trees which would otherwise be lost. This is especially advisable where there is only a little blight in the orchard (by this I mean to say that unless the infection is so serious as to necessitate the destruction of the entire tree), and it should always be practiced. The dry summer weather of most of the Pacific Coast country, especially from Southern Oregon southward, is certainly not favorable for new infections, but occasionally spring rains occur rather late, and sometimes extend into the summer and after the blossoming time. Until the present year such has not occurred in Southern Oregon, but the past spring has had several infection periods in which conditions have been extremely favorable to the development and spread of the disease. Under Eastern conditions, or where excessive spring and summer rains are the rule, summer cutting is only half successful, and has, therefore, been condemned by most pear and apple orchardists as a failure. Summer cutting is a failure, or is made apparently so because of the fact that new infections, invisible at the time the work is done, may develop in a few days so that a week after the most thorough cutting out of the blight a new crop of infection is found thriving. Another source of difficulty in the spring or summer time arises from the rapid extension of the blight infection in the branches of varieties that are very susceptible to the disease. Sometimes, especially where the infection has reached a large leader or the body, the germs often reach a

foot or two beyond the discoloration, as the disease is spreading so rapidly that the bark has not had time to discolor sufficiently to be detected; therefore, in summer cutting the removal of the infection must be at a greater distance from the point of infection than in fall and winter work. Experienced men can judge somewhat of the distance by the rapidity with which the stained bark blends off into the normal bark. Furthermore, reddish streak will often be apparent in the cambium and young wood, and by following it up, a clue may be had as to the possible trend of the blight. The greater the distance in which the blending takes place the lower the cut must be made, and conversely. Disinfection is more important in summer cutting than in winter cutting, and, although in the dry Coast climate the sunlight and dry atmosphere will usually take care of most of the germs accidentally left on cut surfaces, it is by no means true that infection may not take place from such cases. Furthermore, a foggy morning following the cutting might spoil the whole procedure, so the only safe way is to always disinfect. In a recent bulletin published by one of the Eastern agricultural colleges the recommendation is made to "disinfect the cut or wound and not the tools." This is one of the worst mistakes that could be made, and shows that the author has never had any practical experience in fighting the disease. Often in using the tools, accidental cuts or punctures are made, and it may happen that infection may be produced by them. As to the choice of a disinfectant, permit me to state once more that there is nothing cheaper nor better than bichloride of mercury, and any substitute for it should not be considered. Always use the proper strength, one to 1,000, or even stronger, and accept no substitutes. Do the work of summer cutting of blight with as great care as possible; if this is

not done you may reasonably expect to do it all over again, and, perhaps, lose some very valuable trees.

I note in a bulletin published by the Oregon Agricultural College the following statement: "Experience has shown that it is of little permanent value to cut out the fruit spurs and twig blight as they appear." This statement is merely qualified by saying that, "Unless these forms of the disease extend into the branches on which they occur, and a canker is formed, the disease naturally becomes limited and the germs gradually die, due to drying out of the canker, so that at the beginning of the dormant season very few such cases show live germs present." The above statements do not seem to indicate a knowledge of varietal susceptibility nor the effect or influence of climatic conditions. It would seem to indicate merely a study of conditions such as we would find in parts of New York, along the Great Lakes and in the New England states, generally. On the Pacific Coast conditions are entirely different. In my experience on the Pacific Coast, such varieties as the Spitzenberg apple, the Bartlett, Howell, Easter, Bosc and Comice pears are very susceptible, and at no time should one disregard the removal of a fruit spur or a twig which is found to be infected with blight. During the past four or five years on the Pacific Coast, it has been my experience that thousands of trees have been saved by the prompt removal of infected twigs and fruit spurs.

I also note in a bulletin published by Cornell University, which is probably responsible for statements made by the author of the Oregon Agricultural College bulletin, the following: "Break out all blossom spurs that show the disease and remove them from the orchard. * * * The removal of these spurs as soon as they show the disease will prevent the bacteria from getting into the limbs." This advice is almost as absurd as that of not removing them at all. Never remove an infected spur by breaking it off. First find the limits of the infection and then remove the spur with a knife. I have in mind a particular case in which the advice "to break off the infected spurs" nearly ruined an orchard. It is really too bad that we are compelled to speak so plainly in this matter, but in our work we have had to contend with growers who take every opportunity to avoid doing efficient work, especially so when guided by statements published and sent out from sources supposed to be reliable and authentic.

By far the greater part, probably as high as 80 per cent, of the loss of pear trees in California and Southern Oregon has resulted from body and limb infections through water sprouts and low fruit spurs. Water sprouts coming up from the root system, even at some



THE FAMOUS FRANQUETTE WALNUT, GROWN NEAR CRESWELL, WILLAMETTE VALLEY, OREGON

distance from the base of the tree, have caused fatal infections. Fruit spurs, when located on the body or main forks, and becoming infected, soon introduce the germs into the thick, fleshy bark, which carries much of the sap, and destruction is very rapid if the tree is growing rapidly and if it happens to be a very susceptible variety. Water sprouts from the French stocks on which the majority of our commercial varieties are grafted are very susceptible, and should be removed with the greatest care. It needs no argument, therefore, to state that the removal of water sprouts and fruit spurs well up on the limbs is an important subsidiary practice in the control of pear blight. Much of the cutting of water sprouts is done by farmhands, who remove them so as to leave a stub an inch or so long. The result is that several water sprouts come from the same place the next year. Water sprouts should always be cut out as far in as the wood, and a gouge or sharp saw, although producing a larger cut surface, effectually removes the spur for all time. Heavy pruning back of the tops of the trees, as generally practiced throughout the Coast as a means to secure heavy fruit yields, encourages the pushing of these water sprouts so that the problem is really an important one.

Crown galls, which may be found on any part of the root system or the body and branches of a tree, should always be removed when found. The Spitzenberg is very susceptible to crown gall, and it is not infrequent to find numerous galls on the body and limbs. The peculiar nature of these crown galls is such that pear blight germs find a ready entrance. During the past season I have seen hundreds of infections which entered the trees through crown galls. In cutting away crown galls, which in themselves are caused by a bacterial organism, the bark and cambium should be peeled away at least an inch from the edge of the gall, and the gall itself completely cut out with a chisel or gouge. Then thoroughly sterilize the exposed surface. The reason for going well beyond the outer margin of the gall in removing it, is because we find the organisms causing the crown gall in greatest numbers along this margin.

One matter of very great importance, and which has been mentioned before, is the possibility of working all the non-resistant varieties of pears and apples on resistant stocks or bodies. It has been stated that the Winter Nelis and the Kieffer varieties of pears are the most resistant of commercial varieties. Under Eastern and Southern conditions, the Kieffer pear is really the only one that has stood against the ravages of the blight. By this I do not mean to say that it is wholly immune, because under extreme conditions it will blight. However, the conditions on the Pacific Coast



GATHERING CHERRIES FOR THE PACKING HOUSE, AT CRESWELL, OREGON

are such that if the Kieffer were used as a stock or body there would be little danger of losing the tree by root and body infections. Experience in California has shown that while Bartlett and other non-resistant varieties have blighted as far as the Nelis and Kieffer stocks, the infections have usually stopped at the graft union. Every pear grower on the Coast who has had experience with blight knows that Winter Nelis and Kieffer, the latter being very rarely grown, seldom blight seriously, although they may be surrounded by a great deal of infection. Of course, we do know, on the other hand, that they are not immune even on the Coast. I could offer as a suggestion that Kieffer stocks might well be set out and afterwards top-grafted to any of the commercial varieties of pears. This will, at least, provide resistant bodies and roots which will eliminate the danger of loss by body and root infection. I wish to urge that the finding of a variety of pear entirely immune to pear blight will alone solve the pear blight problem for this species of pome fruit. The same will be true of any other of the pome fruits. As soon as an immune is found the possibilities of plant breeding will, no doubt, evolve commercial varieties equal to those that we have now, and, at the same time, they will be immune from disease. This is looking far into the future, but it will be done as it has been done with other plants.

Some remarkable cases of eradication have been attempted and successfully accomplished in California and Oregon orchards, notably in the vicinity of Vacaville, California, and in the upper Rogue River Valley in Oregon. In some cases where perhaps 50 per cent of the trees were infected on the bodies and in the roots, but still had sufficient living bark and a few roots left, the diseased portions were completely cut out even to the removal of all of the roots on one

side of the tree and peeling fully three-fourths of the bark from the body. I have noted in some instances where fully three dollars in labor was expended in removing the blight from a single tree. This, of course, is exceptional, but where the value of the tree may be placed at from ten to fifty dollars, depending upon its ability to bear heavy crops of fruit, this would not seem to be an undue expenditure in eradicating the blight and saving the tree. Many of the trees so treated have not lost their vigor and are still bearing good crops of fruit. From our standpoint, as pathologists, if the pear blight is completely removed under antiseptic methods from the body and roots, the job is satisfactory. It remains, therefore, with the grower to decide how much labor he is going to undertake to save the tree. Experience throughout the East and South has been that where much work of this sort has been attempted on the bodies, numerous failures have resulted, and the work rendered worse than useless. There is also more or less danger, in such cases, of the blight in the sap wood. While the germ almost wholly lives in the bark and cambium, it is also known that it may infect the rich sap wood of the Bartlett, Howell, and other varieties of pears. This is also true of the Spitzenberg apple. Occasionally it has been noted that the germs spread out in the vessels of the wood and live on the starch and sugar stored there. It is, therefore, desirable to leave all eradication work on the bodies dry out thoroughly for perhaps a month or so before painting over the wound with white lead paint. If any growth takes place the ooze may be detected by the discoloration appearing on the paint. It is certain that a great deal of blight eradication work may be done to the best advantage in the early autumn, for certainly better results may be obtained before the fall rains begin. It is also

much easier to detect the blight which has attacked the branches and twigs during the summer, because at this time the foliage generally shows where the blight has been working. Besides, trees that have the roots infected usually begin to show a reddish discoloration in the foliage. A bad body or limb infection will also have a tendency to cause the same discoloration in the foliage above the infected part. However, this reddish discoloration of the foliage is, by no means, a certain indication of blight infection, as there are many other causes which would produce a like appearance in the foliage. Root rot, borers, gophers or even a girdle caused by any means whatever will produce practically the same discoloration. In irrigated orchards where the water has been cut off too early in the summer, there is always a tendency toward foliage discoloration. The foliage test, however, is a sure one that something is wrong with the tree, and such a tree should never be passed by without making a very critical examination. Never leave a tree unless you are absolutely sure of your work. Careless inspection and careless eradication are really worse than no work at all, for, on the one hand, enough work may be done to deceive, while on the other hand the chances for infection and subsequent spread of the disease remains.

Spraying, as a rule, is of little use in controlling the blight. In the blooming season new blossoms are opening every hour of the day, and new shoots are pushing forth, all of which are subject to infection through insect agencies. From the standpoint, therefore, of attacking the pear blight problem by spraying there is nothing to be done so far as the blossoms and young shoots are concerned. On the other hand, we have been able to cover up some mild cases by whitewash, applied thickly, so that they were unable, temporarily, to be a source of infection during the blossoming season. Whitewashing or spraying in the winter time may be of some slight assistance in the matter, but it is not recommended. A strong lime-sulphur wash applied to the bodies just before the blossoms open will have a tendency to keep insects away from any infection which would ooze. It must be understood, however, that all pear blight



AT WORK IN THE ORCHARD OF S. L. ALLEN & CO., LO LO, MONTANA

infection should be carefully removed, and in no case should there be any attempt to cover up any known case of hold-over blight. The only reason for advocating the strong lime-sulphur wash is that, should a case be missed by accident, the use of the wash may prevent the infection from getting away. Just as soon as it is discovered, whether the wash has been applied or not, it should be removed. I wish to emphasize that any attempt to spray or wash may be considered only a temporary makeshift. If there is a case of hold-over that has been covered by spray or wash, it must be eventually removed, and especially so if it is in the body of the tree. The wash in no way controls the spread of the blight in the soft bark beneath; its only office is to prevent, if possible, the spread of blight to other trees, by preventing insects from coming into contact with the bacterial ooze.

There are on the market a number of so-called remedies for pear blight. All of the concerns selling these remedies have no standing whatever, and their literature, which is sent broadcast over the country, may well be promptly thrown in the fire. A favorite remedy is a mixture of potassium cyanide and sulphur placed about the roots of the tree. Still others consist of such insolubles as charcoal, calomel, sulphur, bone black, and other substances put into holes bored into the bodies of the trees. In every community trees may be found that have been treated

in this way, and invariably the material put into the holes has neither changed its chemical makeup nor has it diminished in quantity by absorption.

A common remedy is the use of table salt, or even some alkali, both of which would be promptly removed from the soil if present in too large quantities in nature. The use of table salt is merely to inhibit the growth of the tree by preventing the normal taking up of water by the root system. A tree grown in a very saline soil cannot take up water enough to make a strong growth, hence, it does not blight badly; perhaps not at all. As indicated before, trees grown under good cultivation with sufficient moisture and plant food make a strong growth, and are, therefore, more subject to blight. There should be no desire on the part of an orchardist to injure his soil, and, consequently his trees, by adding to the soil any chemical or salt known to have a poisonous action, or, at least, an inhibitive effect. Do not take the word of everyone or anyone who has something to sell. Before buying any cure or remedy, consult some one who can be trusted and who has nothing for sale.

The whole subject of pruning is such a lengthy one that it can scarcely be gone into in full detail. However, the vase-formed tree, headed low and with the main branches shortened in to eighteen inches or less, is decidedly the most desirable form to grow a tree. Up to the third year the main forks or leaders should be shortened in so as to make a tree with sturdy framework, and at the same time keep it down low so as to be accessible for spraying, picking fruit, etc. If the water sprouts are kept off the body and main limbs, and if lateral fruit branches are developed within the fruiting area, the most desirable form of tree will be produced for controlling the blight. A tree pruned to this form, even if infected, has its blossoms well



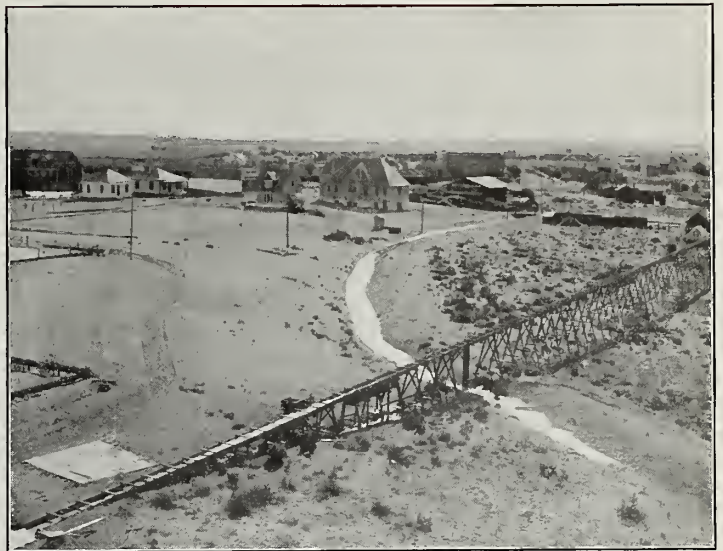
SEVEN THOUSAND POUNDS NET OF ALFALFA, CUT JUNE 9
HERMISTON, OREGON

away from the vulnerable parts of the tree; namely, the body and framework. The tall pyramid, with a single main leader and with its long branches covered with fruit spurs and water sprouts, makes the work of fighting pear blight a difficult one. It is hard to get into the top of the tree with this closed center to find out what is going on, and, besides, the fruit spurs and water sprouts being close to the body as well as upon it, readily carry the blight in, usually resulting in the entire loss of the main portion, if not the entire tree. One only need look around the valley where the pyramidal or central leader type is grown, and it will be seen that an infection on the body resulting in a girdling of it necessitates the removal of the entire center above the point of infection; thus removing practically the heart of the tree's growth. Any of the limbs left below the point of infection are usually long and slender, and, besides, are usually poorly placed to form a good tree of any sort thereafter. The prevailing type of Bartlett tree in California is very near the desirable form; however, in many cases, after heading back the trees, they have been allowed to grow three or four years and then reheaded several feet from the crown, sometimes as high as fifteen feet, resulting in a two-story pear tree. In very few cases has there been any attempt to keep the fruit off the main framework branches, and to keep the water sprouts and fruit spurs from the bodies and roots. There has been no special occasion for forking at the framework, since at the time the trees were being formed pear blight had not made its entrance into the California orchards. Among many growers, especially those of the old school, in the Rogue River Valley, we find that there is a tendency to adhere to the pyramid form of tree in practically all varieties grown, even the Bartlett. We readily understand why this has been the case, because the pioneer fruit growers in the valley recognized only this form of tree as being, perhaps, the easiest to prune and undoubtedly the easiest to keep from breaking down when heavily loaded with fruit. Their weak attempts at forming the

open-headed tree were failures because during the first two or three years of growth they neglected to shorten in enough. Even today this is the common error; it would be better to shorten to six inches than to lengthen to eighteen inches. Now that pear blight has come into the valley, this method of pruning, or forming the tree by maintaining a central leader, will have to be altered. I know of perhaps five or six hundred trees that have been wholly lost on account of this style of growth; that is to say, practically the entire bearing portion of the trees had to be taken out on account of blight girdling the leader. In many young orchards which have been planted within the past two or three years, the growers are changing them into the vase or open-head form, recognizing the great difficulty in saving the other type of tree should blight become serious. In the larger trees it is a rather difficult thing to change them over into the vase form, but in every case where blight has seriously damaged such trees the resultant tree, of necessity, becomes vase formed when the blight is cut out.

Severe pruning, though in most cases, of course, giving good results in stimulating vigorous twig growth and fruit production, tends also to result in more serious attacks of the blight. Everyone knows that the more vigorous the winter pruning the more luxuriant the twig growth during the following season. The result always is that every dormant bud tends to push, and, being very tender and sappy, easily becomes infected and blight badly. On the other hand, as soon as

the trees come into bearing, summer pruning, if practiced in the proper way, will result in a more normal vegetative condition, and the tendency to set fruit will also be correspondingly greater. A heavy set of fruit, other factors being equal, will always tend to keep down excessive vigor; and this is usually a good thing under Pacific Coast conditions, where the growing season is quite long as compared with



VIEW OF HERMISTON, OREGON

conditions in the eastern sections of the United States.

Cultivation, fertilization and irrigation are three very important factors to be considered in connection with the control of pear blight. I shall take these up separately, with only as much detail as will make the text plain. Thorough cultivation is more essential, especially from Southern Oregon southward on the Pacific Coast, than in the East, for the reason that rainfall is not only much less, but from the spring of the year until autumn the season is practically without precipitation. In districts where irrigation is practiced, cultivation is just as necessary. In the East it is not an uncommon practice to permit pear and apple orchards to grow in sod when it is evident that the blight is getting beyond control. Everyone knows that lack of cultivation induces surface evaporation from the soil, and trees are thus made to grow more slowly because of lack of moisture, and hence, even very susceptible varieties of pears and apples do not blight badly because the vegetative vigor is lacking. The necessity for cultivation as well as the method to be used varies so greatly in the Pacific Coast orchards that it is impossible to make any general rule. Each soil type requires different treatment to the end that soil moisture be retained during the growing season of the trees. Some of the moist, deep soils in the Sacramento River districts, and perhaps in a few spots in the Rogue River Valley, retain their moisture so well that pears get along very well for a year or so without cultivation. On the other hand, practically all of the lands in these districts need thorough cultivation to bring them up to anything like normal and to mature full crops.

The matter of fertilization is an important one, especially where large crops have been taken for several successive years from an orchard. However, it is known that nitrogenous fertilizers, such as stable manure, as well as commercial fertilizers containing large amounts of readily available nitrates, tend to produce luxuriant growth, and hence, trees



ONE-YEAR-OLD ALFALFA FIELD AT HERMISTON, OREGON

so stimulated blight more seriously than those not fertilized. Fertilizer must be used, but it should be used in moderate amounts. There is no advantage in using an excess of potash to make the trees more hardy and thus more resistant to blight. The fondest hopes of some would-be experimenter have been blasted by trying to prevent blight injury through the use of potash in the form of muriate and sulphate. It is the same old story, the blight must be controlled by having no hold-overs present during the infection period. I have seen large commercial orchards practically ruined in one year where potash was used as a preventive against blight, so avoid using it for any other purpose than adding fertility to the soil.

The whole subject of irrigation is so broad that it will only be discussed here in its connection with the control and eradication of pear blight. While irrigation cannot be considered in the same light as rainfall, since it is merely water applied to the root system, it is, nevertheless, important to understand it thoroughly, especially in connection with blight control. It has been pointed out that periods of rainy weather during the spring and summer produce what has been termed infection periods, through the wetting of the trees, and thus permitting a spread of the infection through infected trees, and making it possible for the germs to be more readily distributed over a considerable area in any district. The warm, muggy weather, such as we find common in the East following rainy periods, further tend to influence the spread of infection. Irrigation in no way induces any of the above conditions, but, on the other hand, its effect is noted in the tendency of the trees to push very rapidly under a normal water supply and to become sappy and less resistant to blight. It is well, therefore, to have this in mind, and to apply no more water than is actually necessary for the production of the crop or the maintaining of a healthy condition in the tree. In cases where a serious infection has made itself apparent, the water should be immediately turned off and kept off until the blight is under control.

It is safe to say that in all irrigated districts some harm usually results from over-irrigation rather than under-irrigation. The tendency to apply too much water is especially the great fault with beginners in irrigation. To irrigate



AUSTIN TILE DITCHER

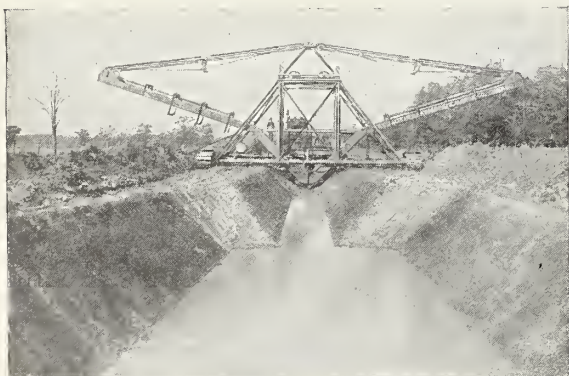
properly and scientifically, one should know soil conditions, soil depths, and drainage. Another important factor is a knowledge of the duty of water; by this it is to be understood the amount of water which should be used to produce the best results. The Rogue River Valley is so situated that a minimum amount of irrigation should be used in certain well-defined districts, or, perhaps I might say, very small areas. Generally, pears can be well grown without any irrigation whatever; and with good cultivation and proper soil treatment, apples will be able to get along fairly well with much less water than is generally supposed. It is well known that the destruction of the pears by blight in the San Joaquin Valley, in California, was due as much to maintaining too vigorous a growth by irrigation as it was through lack of the important detail knowledge of fighting it scientifically. Not only were the orchards lost, but valuable soils were practically ruined by over-irrigation.

It is a well-settled fact that irrigation is to be practiced more or less generally in the Rogue River Valley, but I wish to sound this note of warning in regard to the matter of over-doing it. It is doubtful if the heavy, black, sticky soils of the valley floor are at all benefited by irrigation; I might say that it has been proven that they may be injured.

In the Eastern states it is a very common practice to sow a crop of cow peas, sorghum, or sometimes even Indian corn in the late spring. This is done to take up the surplus moisture of the soil from the trees, and has a tendency to check luxuriant growth, and hence acts to check pear blight. It must be understood, however, that the above practice would not be at all advisable in most Pacific Coast districts, where there is a shortage of soil

moisture. There are localities, however, where it may on some occasions become necessary to make use of cover crops in this way. The use of cover crops on the Pacific Coast should be for a wholly different purpose; namely, to add fertility to the soil as well as to change its physical condition; in fact, the use of cover crops may be considered to serve the same purpose as stable manure in making the soil more easily tilled and rendering it in better condition for giving up plant food. Cover crops of vetch or cow peas, of course, add nitrogen to the soil, and, from this standpoint, it is perhaps better that these leguminous plants should be used in preference to rye, or any of the grains or grasses. On some soils such cover crops as rye or wheat do not give the best results, especially on the sticky soils. It usually takes a great deal of labor to produce a good soil mulch after turning under a crop of rye.

The rule in the pear orchards of the Eastern states has been to keep the trees in a half-starved condition for fear blight would destroy them. Orchard treatment of this kind naturally renders the fruit less luscious and with a distinctly poorer flavor than fruit grown under good cultivation. While I would advise a good deal of caution in producing too vigorous or sappy a tree, when there is serious danger of destruction by blight, I would not advise the pear and apple growers of the Pacific Coast to starve or under-cultivate or under-prune their trees; but I do mean to say that they should practice moderation in all these things. This is especially true in districts where the blight is new to them, and where they are not thoroughly acquainted with the methods of eradicating it from their orchards and keeping it under control. Pear blight is so different from all other orchard diseases, which respond so readily to spray treatments, that it has been the general rule for whole communities, and even states, to lose all their orchards



AUSTIN DRAINAGE EXCAVATOR

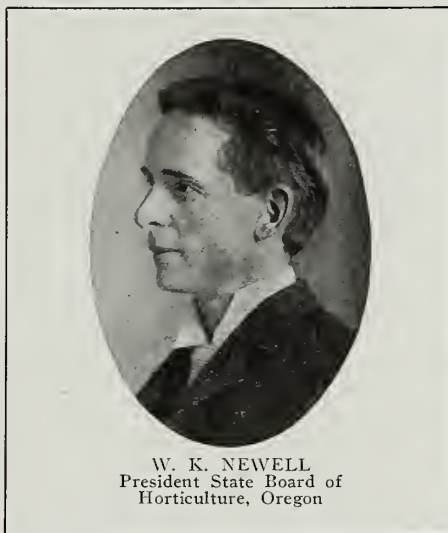
before being brought to a realization of the necessity for studying the disease carefully and obeying to the letter the instructions for combating it.

In a preceding chapter, mention was made of the enormous losses in the pear districts of the San Joaquin Valley, California. In the short space of three years, from 1900 to 1904, almost half a million pear trees were lost by blight. Practically no attempt was made to check the disease, and one of the greatest industries of the San Joaquin Valley vanished like a dream, and even before the people realized what had befallen them. As in other localities, East and South, the growers had a self-sufficient and self-satisfied feeling that blight could never hurt them. They had grown pears for a quarter of a century and more, and such a thing as blight entering their valley was just as impossible as anything one might imagine.

In all that time, thunder, lightning, excessive heat, cold, etc., had caused not the slightest injury. However, as soon as blight came, all the factors mentioned above seemed to explain their predicament fully; they needed no help and spurned assistance. This is the story, in a few words, a story which might be told of many other localities which had suffered the same calamity.

In 1904 the blight invaded the pear district of the Sacramento Valley, and although some little work was done in the matter of eradicating it, the efforts were weak and ineffective. Prominent men in the state became alarmed, and the pathologists of the United States Department of Agriculture were called to the Coast. In the fall of 1904 Professor M. B. Waite made his first visit to California, and inaugurated a plan of campaign for eradicating it, or at least keeping it under control. I may say that the Government pathologists did not come to the Pacific Coast until they were called. Such influential men as Ex-Governor Pardee and prominent Southern Pacific officials appealed to Hon. James Wilson, Secretary of Agriculture, to send as many men as he had available, to aid in what was thought to be almost a hopeless case. Blight was everywhere, with the exception of the Santa Clara Valley, which to this day has kept it out by very careful and hard work. The task undertaken was an enormous one, and the amount of territory necessary to be covered was so large that every available source of help was called for, and the campaign finally started in the early winter of 1905. The time was short, but good work was done. In many districts where there was a willingness to co-operate with the Government officers the blight was checked; in others, where conditions were the reverse, the blight

gained headway. The result of several years' work, which has been carried on up to the present time by the United States Department of Agriculture, is that several districts in the Sacramento Valley and adjacent valleys, have saved



W. K. NEWELL
President State Board of
Horticulture, Oregon

their pears. There are particular instances where practically everything went excepting single orchards which were saved by individual growers, by using heroic measures and carrying into effect every detail given them by the Government officers. To this day these men continue to grow pears, while their neighbors are entirely out of the business. They are charged with being lucky, but there is no luck in fighting pear blight; it is careful attention to detail, and constant watchfulness. Among those who have been successful in fighting pear blight is Howard Reed, of Marysville, California. Mr. Reed, with 6,000 Bartletts, has lost relatively few, although the difficulties he had to overcome would have discouraged the average man. Three years ago his orchard was under water on account of the overflow from the Yuba River, and he was compelled to fight pear blight from boats and rafts. To show you how well he has won out in the fight, I will simply state that his crop two years ago was fifty carloads of first-class fruit, which he shipped to Eastern markets. Besides his green fruit, he dried something over twenty-five tons. I cannot help pointing to Mr. Reed as an example for everyone to follow. He has made doubly good, because he had to fight not only the blight but the mossback community in which he lived.

In the foothill districts of Eldorado, Placer and Nevada Counties, to the east of Sacramento, the loss has been exceedingly light. The growers in these sections began their fight at an early stage of the game and have kept it up unceasingly, so that at this time there are probably no fewer bearing pear trees than there were four or five years ago. In Placer County alone, at the time when I first began my work there, ten inspectors, including the horticultural commissioners of the county,

were put on, and the work of eradication was thoroughly done.

It would be very difficult to tell how many trees were lost in California throughout the entire state, but the figures taken from the carload shipments will tell the story pretty well. In 1900 California shipped 2,115 carloads of pears, and in the same year 7,275 tons were dried, and perhaps half a million cases were canned. In 1907, only 1,039 cars were shipped and only 500 tons were dried. We have no data on the canned product, but it is well known that it fell off correspondingly. Such figures should strike terror into any community whose industry is that of growing pears and apples.

In the Rogue River Valley and in Southern Oregon we find a magnificent soil for pear and apple growing. At this time, with the valley only partially developed, the estimated value of the orchards reaches far into the millions. Pear blight has not been in the valley very long, but it is here and must be considered seriously. Only in three or four cases has it done any serious damage, and the total loss for the entire valley in pears and apples is probably not more than 2,000 trees. The highest recorded loss in one orchard is perhaps 500 or 600 trees, and this loss might have been avoided if the owner had taken the proper steps in eradicating a very few cases of hold-over blight. Another orchard lost nearly 200 trees, but these were mostly infected and practically destroyed before it was known that blight existed in the valley. The writer first came into the valley in 1907, and since that time a very strenuous fight has been kept up. As in California, we had to fight stupidity and ignorance, but, for the most part, the growers have

Continued on page 52



FARM HOME NEAR WEISER, IDAHO



SHOWING ONE-YEAR-OLD GROWTH ON COLUMBIA RIVER ORCHARD COMPANY'S PROPERTY. PHOTO MADE OCTOBER 7, 1910

Photo by C. C. Hutchins, White Salmon

COLUMBIA RIVER ORCHARD COMPANY ENTERPRISE

ONE of the most intelligently developed orchards in the White Salmon Valley, on the north bank of the Columbia, opposite Hood River, is that of the Columbia River Orchard Company. The development work, which was commenced in 1907, has been carried on under the personal direction of Mr. Russell R. Dorr, the president and general manager of the company, with the co-operation of a larger number of scientists and experts than is usually available in the development of an orchard enterprise.

In the early history of apple culture, very little attention was paid to the matter of scientific pollinization, to the selection of the varieties to be grown or to the arrangement of the trees themselves. Experiments and practical tests during the past few years have afforded a vast amount of information of which the progressive orchardist has been able to avail himself, at a nominal cost, through the bulletins of the experiment stations and the publications of fruit journals. Appreciating the fact that thorough pollinization is necessary in order to secure the largest average crop, the management, upon the advice of Hon. Wm. P. Stark, departed from the more common method of planting varieties in solid blocks and adopted the preferable plan of alternating the varieties in every third or fourth row across the entire orchard. Also the trees were planted with due regard to the nature and character of the slopes, thus giving to the individual tree, as far as possible, the full benefit of air drainage and exposure. The company has had an uncommonly good opportunity to develop this feature in the establishment of its orchard for the reason that its lands are rolling, with a difference of approximately two hundred feet in altitude between the highest and the lowest points.

This variation in altitude afforded a natural opportunity for the best application of the two principles of air drain-

age and exposure. The quincunx system of planting was adopted, as best suited to the contour of the lands, with Jonathan, King David and Wageners as fillers, the main or permanent orchard

stumpage had to be removed, while the richness of the soil had developed an extensive root system with which it must have been unusually difficult to contend. The illustrations show the



LOOKING EAST OVER COLUMBIA RIVER ORCHARD COMPANY'S PROPERTY
PHOTO TAKEN OCTOBER 7, 1910

Photo by C. C. Hutchins, White Salmon, Washington.

consisting of Newtowns, Delicious, King David and Stayman Winesap. Some other varieties may be added, including Spitzenberg, upon the lands which are yet to be cleared. At present the company has 8,000 trees and intends to add 4,000 more, thus making a commercial orchard of full 12,000 trees. The location is upon what is known as the "bench," where a red-shot soil is of special depth and richness. The company had one of the most difficult clearing jobs in the history of the valley, but the work was accomplished with more than average thoroughness and economy. Besides a large amount of stone, more than two million feet of timber and

comparative appearance of cleared and uncleared land, of primeval timber land and completed orchard. They furnish the basis for an accurate appreciation of what the company has actually accomplished. The clearing of the lands was done by Japanese labor under the personal observation of Mr. Bryan R. Dorr, who thereby established a reputation for thorough land clearing unsurpassed in the valley. When this part of the work had been completed, Charles H. Sladek came on from the Stark Bros. Nursery Company and took charge of the tree planting and of the trees themselves, as superintendent of the orchard. During the present season, Mr. Homer C. Greene, also an experienced orchardist, has been in charge of the work as superintendent, carrying out in detail the plans which were adopted by the management in 1909, and from which no deviation has been made. The company has, from the very beginning, adhered to and developed a plan and system which, according to expert advice, is calculated to produce the best average results when the trees come into full bearing; and to that end no expense or effort has at any time been spared. Under the superintendence of both Mr. Sladek and Mr. Greene, the trees have been cared for according to the best modern methods, and no losses have occurred in consequence of any of the orchard pests that ordinarily prevail.

Not having its lands entirely finished in the season of 1909, the company, upon the advice of Mr. Sladek and others, adopted a method which has met with considerable favor in other fruit sections and to which special attention may well be called. After thoroughly grubbing the land, and without waiting another



LOOKING NORTHEAST ON COLUMBIA RIVER ORCHARD COMPANY'S PROPERTY, SHOWING POTATO CULTIVATION BETWEEN ORCHARD ROWS. PHOTO MADE OCTOBER 7, 1910

Photo by C. C. Hutchins, White Salmon, Washington

season in order to do the plowing, the company employed a large force of Japs, who set out trees over quite a large area, the soil being thoroughly worked then and during the season by hand cultivation around each tree for the space of from five to six feet. By this means the company gained a full year in the growth of the trees thus planted and cared for, the growth being as satisfactory as in that portion of the orchard which had been thoroughly plowed. Instead of remaining to any extent dormant during the second season, as would have been the case if planting had been deferred until then, the trees became thoroughly well established under this system of hand cultivation and started on a course of permanent development with great vigor when the second season opened. The appearance of the orchard this season justifies the care and method applied to it in that respect. It is worth while for orchardists generally to consider whether they may not, in many instances, gain a season's growth by the adoption of a similar method of treatment which is commercially worth from \$2.00 to \$3.00 per tree.

It is the adherence to such methods as have been applied to the Columbia River orchard which have given a reputation to the Hood River Valley and which are gradually developing the White Salmon Valley along corresponding lines.

The Columbia River Orchard Company has been particularly fortunate in view of the fact that long before its lands had been cleared the management matured and adopted a definite plan of development in advance. The entire subject was first laid before the most successful growers in the Hood River Valley, and, in many details, before the experiment stations at Corvallis and Pullman. Then the subject of variety for foreign markets was taken up with reference to the export trade, both European and Oriental, after which a complete survey of the field was transferred to blue prints, showing the exact location of each individual tree as to



SHOWING TIMBER ON NORTHEAST SECTION OF THE COLUMBIA RIVER ORCHARD COMPANY'S PROPERTY. PHOTO TAKEN OCTOBER 7, 1910

Photo by C. C. Hutchins, White Salmon, Washington

pollenization, whether a permanent tree or a filler. Mr. Dorr has never permitted any departure whatever from the original plans or allowed any reasonable expenditures of money or labor to interfere with their scientific execution. It has been explained in bulletin No. 99 of the experiment station, and by frequent publication in these columns, that many orchards have been established without any definiteness of plan, system or purpose. The managers of this company, however, have worked along definite lines from the beginning, and, having thus availed themselves of the best experience obtainable, will not hereafter be confronted by conditions which necessitate radical changes, disappointment and

loss. Inexperienced people do not always realize this, but it is, nevertheless a fact, and the results are sure to prove it.

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IN A recently published article, Professor Leslie Paul, of Colorado Agricultural College, declares that apple scald is due to "dying of the cells immediately under the skin." The susceptibility of the apple to scald, he states, does not depend upon the variety, "but upon the method of handling after harvesting, the kind of soil upon which it is grown, methods of cultivation, age of the tree and many other factors." Apples with color do not, as a rule, he states, scald as readily as other kinds. He advises wrapping the fruit for long storage and gives the best temperatures as thirty-one or thirty-two degrees Fahrenheit. They should be put on the market as soon as they reach their highest maturity or before. "Indirectly," he adds, "cold storage tends to promote a higher order of orcharding by teaching the grower better selection; better methods of culture; more skill in the art of handling and marketing his crop." The keeping of apples on a large scale, he said, began about 1890. On December 1, 1898, there were about 800,000 barrels in cold storage; in 1903 there were 2,348,540 barrels stored in nearly 1,000 warehouses. This rapid increase was due to development of improved methods of refrigeration.—"Ice and Refrigeration."

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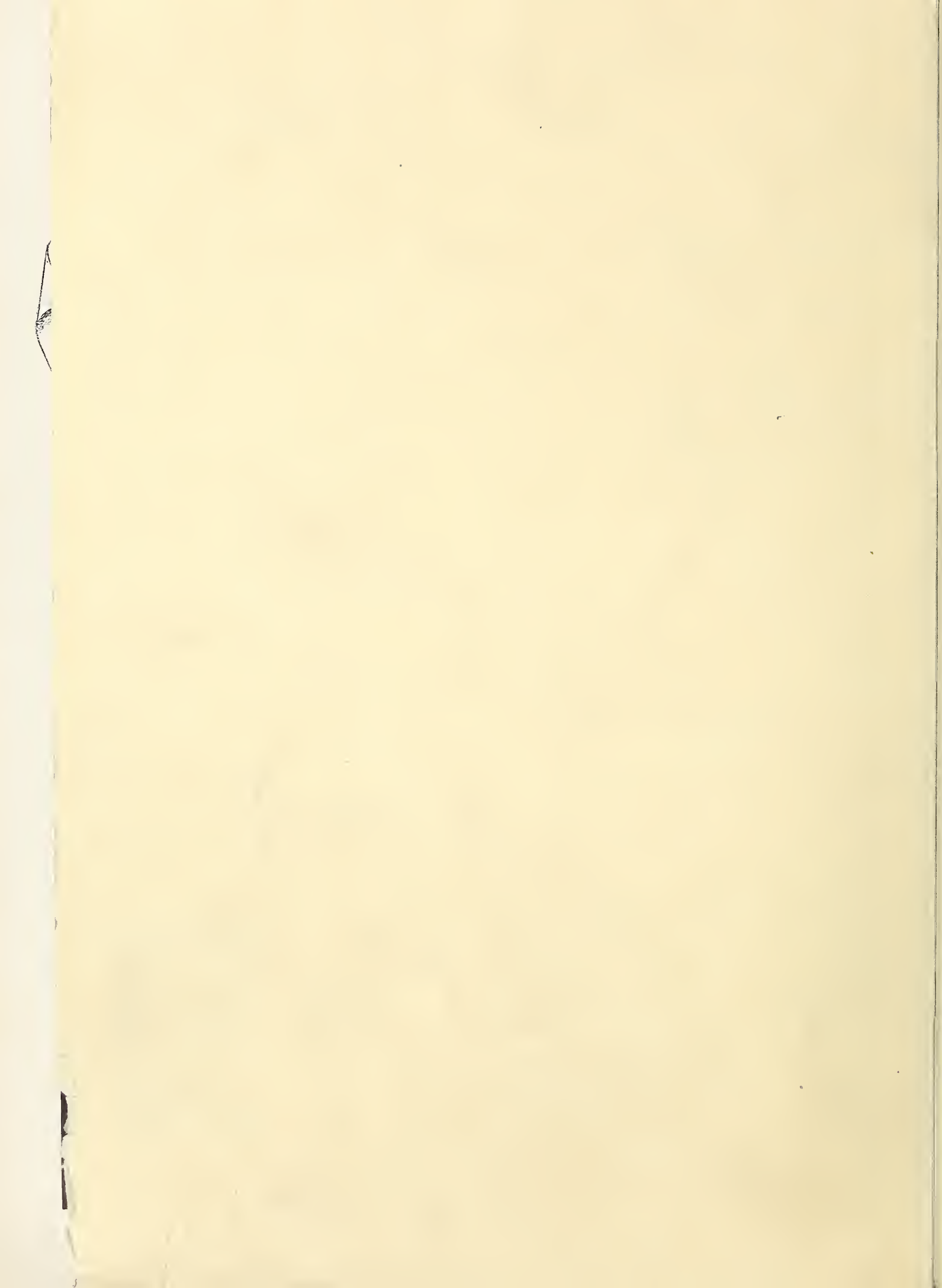
The following is a list of the big apple shows which will be held this year, and every one of these shows in all probability will be at least 10,000-carload displays. These shows are very educational and every apple grower, yes, every fruit grower, should make it a point to attend at least one of them, the one in which he is most interested, and if possible, more than one. The editor knows whereof he speaks, as he has been a regular attendant to the National Apple Show at Spokane every year, and he has learned more about the apple business from every point of view at these apple shows and the amount of information acquired at each apple show has been of inestimable value. Excursion rates will, in all probability, be made on all railroads. The following is the list to date:

Albany Apple Show, Albany, Oregon, November 9 to 11; Western Montana Apple Show, Missoula, October 10 to 15; California Apple Show, Watsonville, October 10 to 15; National Apple Show, Spokane, Washington, November 14 to 19; Canadian National Apple Show, Vancouver, B. C., October 31 to November 5; Donaldson Fruit Exposition, Minneapolis, October 31 to November 10; National Horticultural Congress, Council Bluffs, Iowa, November 10 to 17; Oregon Apple Show and Horticultural Society, Portland, November 30 to December 2; United States Land and Irrigation Exposition, Chicago, November 19 to December 4; National Irrigation Exposition, Pueblo, Colorado, September 26 to 30; National Land and Irrigation Exposition, Pittsburg, October 17 to 29.



LOOKING NORTH ON COLUMBIA RIVER ORCHARD COMPANY'S PROPERTY OVER LAND READY FOR PLOWING AND SETTING. PHOTO TAKEN OCTOBER 7, 1910

Photo by C. C. Hutchins, White Salmon, Washington



A "Better Fruit" Subscriber got \$2.37½ per box for his Stark Delicious

This is his story: read it

Toppaniah, Wash., Oct. 6, 1910.

Stark Bros. Nurseries & Orchard Co.,
Louisiana, Missouri.
Gentlemen:

Have just sold my 1910 crop of Stark Delicious, buyer to take all sizes and grades at \$2.37 1/2 per box. Buyer furnishes lining and wrapping paper, grades and packs the apples and nails them up.

Spitzenberg has always been the highest price apple in this Valley. This year the average price of Spitzenberg is about \$1.50 per box, grower to do the packing, grading, etc., so you see the Delicious is selling for a dollar more than any other variety.

My orchard is seven years old; this is the third crop. Some trees this year produced as high as ten boxes.

Very respectfully,
Dick Hart

MR. HART is a successful orchardist of the Yakima Valley. He planted Stark Delicious seven years ago because he saw its future; he planted Stark Delicious in the face of criticism and in spite of his fellow planter's prejudice in favor of Spitzenberg and other "older and better-tried" varieties.

Mr. S. F. Burgess of Okan County, Washington, has 36 nine-year-old trees of Stark Delicious. He recently sold his 1910 crop from the 36 trees for \$1,500.00, receiving \$3.25 per box for 250 boxes and from \$2.00 to \$2.50 for the balance. His letter, however, tells the whole story:

"I have Stark Delicious trees nine years old. They began bearing the third year and have borne every year since, the largest crop of that of this year, 1910, averaging 15 boxes to the tree. The gross returns from these trees this year will not be less than \$100.00. I have already sold 250 boxes for \$3.25 per box and the balance will bring from \$2.00 to \$2.50 per box. The trees are hardly and less bothered by codling moth than any other in my orchard. If I ever plant another orchard one half of it will be Stark Delicious."

Stark Delicious will do for you what it is doing for Mr. Hart, Mr. Burgess and scores of other orchardists throughout the country; it will make you money—more money than any other variety. Not only has it topped your own and other markets this year, but it did so last year, the year before, and the year before that.

Since you are in the business of fruit-growing for profit, why not plant the variety that will yield you the maximum of profit? Stark Delicious will do it.

Eventually you will plant this apple, and on a large scale. Your natural desire to make the most of your opportunities will lead you to do it. Then why not do it this coming spring? Why put it off another year? Remember that a tree planted this year is a year nearer bearing and profit than one planted next year.

The propagating end of our business has produced ten million apple trees this year—three million of that number are Stark Delicious; splendid, healthy, perfectly rooted one-year trees—the best that scientific nursery-man and modern methods can produce. They are the kind of trees that got \$2.37½ fruit for Mr. Hart and a \$1,500 crop for Mr. Burgess—the kind that will make you a highly profitable orchard.

Remember there is only one genuine Stark Delicious and only three million trees to supply the planters of the entire country. The demand is unusually active, greater than last year when we sold nearly two million trees of this one variety.

Place your order now—today—and be sure of getting your trees when you want them. Here are prices, the 25% discount, the free freight offer, etc., and here is a convenient coupon to fill out.

Prices for one-year Stark Delicious trees*

Extra Grade, 5 to 6 feet				3 to 5 feet			
Each	10	100	1000	Each	10	100	1000
50c	\$4.50	\$40	\$330	45c	\$4	\$35	\$280
2 to 3 feet				Maid Size, under 2 feet			
Each	10	100	1000	Each	10	100	1000
35c	\$3	\$27	\$200	30c	\$2.50	\$20	\$150

*30 trees at the 100 rate. 300 trees at the 1000 rate. More than 10 trees, and less than 30, at the 10 rate. Less than 10 at the each rate.

These prices subject to 25% discount for cash in full of order, to be sent us before shipment is made. We will notify you to send money a few days before shipping time. Free freight on orders amounting to \$10.00 net or more.

Free boxing and packing on all orders. Prompt delivery and perfect trees at the time you want them. Complete satisfaction to every buyer.

W. T. Clark, President of the Washington State Horticultural Society, is going to plant Stark Delicious. Read what he says:



W. T. Clark

I think very highly of Stark Delicious and also Stark King David. In fact I am going to plant these varieties and am sure any orchardist who plants them will not make a mistake.

(Signed)

W. T. CLARK,
Pres. Wash. State Hort.
Society.

Stark Bros. N. & O. Co.,
Louisiana, Missouri. Date 1910.

Please ship me _____ 1-yr. Stark Delicious trees size _____ feet
Number _____
for which I will pay you \$ _____ net when notified by you that
order is ready to ship

I want trees at my shipping point about _____ Date 1911.

Name _____

Post Office _____ County _____

State _____ My shipping point is _____ Name of Station _____

which is on the _____ Railroad.

Name of R. R. _____ B. F.

BETTER FRUIT

HOOD RIVER, OREGON

OFFICIAL ORGAN OF
THE NORTHWEST FRUIT GROWERS' ASSOCIATION
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PUBLISHED IN THE INTEREST OF MODERN
FRUIT GROWING AND MARKETING
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H. E. VAN DEMAN, *Contributing Editor*

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ADVERTISING RATES ON APPLICATION

Entered as second-class matter December 27, 1906,
at the Post Office at Hood River, Oregon,
under Act of Congress of March 3, 1879.

THE EDITOR has been busy picking
and packing his apple crop.

You may like the editorial in this issue,
and you may not. Our editorial columns
will be more vigorous in the future than
they have been in the past. Our edi-
torials will cover a wider range, and be
more forceful. We will present our
views in plain words.

One system of harvesting the apple
crop is to pick all the apples first, put-
ting them all under cover; then begin
the wiping, sorting, grading and packing.
This is the simplest system and easiest.
It has some advantages, the principal
one being that you can concentrate your
forces on the picking and get your crop
under cover, if you have sufficient room,
before the rainy weather commences. It
requires a very large packing house, how-
ever, enough to hold the entire crop
under cover. The editor has followed
this plan for seven years. The disadvan-
tage is that the first apples picked lie in
the packing house too long before being
packed and put into cold storage, gener-
ally from three weeks to a month in
large orchards, and consequently their
keep is shortened.

Another system is to pick, wipe, sort,
grade, pack and haul to the depot at the
same time. The editor has long believed
this to be the proper system, and tried it
this year for the first time. This system
requires a well balanced crew, but when
properly managed it is the editor's opin-
ion that it is far the best method. The
editor's crew consists of five pickers, one

hauler, three wipers and graders, one
waiter, three packers, one nailer, and one
team hauling to the Hood River Apple
Growers' Union. It was a well balanced
crew. The apples went out of the front
door packed as fast as they came in the
back door from the orchard. The most
important features in this method are,
first, your apples are packed immediately
after being picked, and are hauled to the
depot and loaded into iced cars, which
convey them to the cold storage plant,
where they are held until sent to the
consumer, to whom they are delivered in
perfect condition. Secondly, this system
requires only a moderate sized packing
house; in our opinion, however, the pack-
ing house should be large enough to hold
at least half the crop under cover in an
emergency.

In every city and village, where the
business of the town is dependent to a
large extent on the orchardist, it would
be considered a great favor by the fruit
grower if the city people, as far as is
possible, would recognize Saturday as the
orchardist's trading day and would do
the greater part of their buying and
trading during the other five days of the
week, leaving Saturday for the busy
store keeper to wait on his country
customers. The city people are smarter
than we are and ought to be able to get
rid of their money in five days. We
farmers can get rid of ours in one day.

The picking and packing season is a
mighty busy one for the fruit grower
and it is important to hurry the work
along as fast as possible, because the
quicker the apples are picked and packed
after they reach proper maturity, the
better they are and the longer they will
keep. Therefore, in the districts where
fruit growing is the main business, all
publicity meetings, club meetings, social
functions and such other events as the
fruit grower may be interested in and
which take up his time should be post-
poned if possible until the harvesting
season is over.

The auction markets of Chicago and
New York are showing up low prices.
It is apparent that buyers are calculating
that there is a big crop of box apples to
come on the market and believe that the
bulk will come to these two cities, con-
sequently the buyers are playing a wait-
ing game and apparently believe that by
so doing they can force down the market
and keep it down. Here is the problem
for the fruit growers to study.

Every fruit grower should know how
to pack apples, because only by under-
standing how to pack and being able to
do it himself is he able to see that pack-
ing is being properly done. Every fruit
grower should know how to do every-
thing connected with the fruit growing
business, and the only way to learn is to
do it yourself. Experience is the best
teacher.

Every fruit grower should so arrange
his affairs, both business and social, that
when the apple picking season comes on
he can devote his whole time to harvest-
ing his crop.

The Watsonville Apple Annual, held in
Pajaro Valley, California, was a great
success, over fourteen thousand boxes, or

about twenty-five carloads, being on dis-
play. Descriptive articles will be found
elsewhere in this issue.

The January edition of "Better Fruit"
will be a special number devoted to giv-
ing publicity to the different apple shows
that have been held in the Northwest
during 1910. It will be a splendid num-
ber, containing good descriptive articles
on the different apple shows and illus-
trating every one of them, including the
California Apple Show, Montana Apple
Show, the National Apple Show at Spo-
kane, the Oregon Horticultural Society
and Apple Show at Portland and the
Canadian Apple Show at Vancouver.

Apple prices do not seem to be satis-
factory at present writing. The buyer
thinks they are too high and the grower
considers the offers too low, which looks
as if we would have to get together.
Either the grower or the buyer is wrong,
and it remains to be seen which.

Some enterprising men have borrowed
a great many of the ideas of "Better
Fruit" and incorporated them in their
horticultural journals, but perhaps it is
better to borrow from "Better Fruit,"
because it is a reliable paper and contains
the information that the fruit grower
wants to know, than it would be to pub-
lish a lot of stuff of no value to fruit
growers, yet we cannot help adding that
we always admire originality.



"BETTER FRUIT" PUBLICITY

BETTER FRUIT sent a representa-
tive to the Watsonville Apple An-
nual, held in Pajaro Valley, California.
The editor of "Better Fruit" had been
invited to give an address, but on account
of business affairs over which he had no
control he was unable to attend, which
we regret exceedingly.

However, our assistant editor was
present and gave an address that met
with approval and proved interesting to
the fruit growers of California. "Better
Fruit" was greatly appreciated by the
California people, which appreciation
was generously and appropriately ex-
pressed in articles which appeared in the
San Francisco Bulletin, Chronicle, Post
and Call, whose combined circulation is
probably near a quarter of a million.
The big California dailies evidently
appreciate the great value of "Better
Fruit" and generously showed this
appreciation. It is our pleasure to extend
sincere thanks to these dailies for the
splendid notices they have seen fit to
give us through their valuable columns.

It is recognized by fruit growers and
by broad-minded business men that
"Better Fruit" has been a great and
important factor in the development of
the fruit industry in the Northwest, es-
pecially in Oregon and Washington, where
our circulation is largest. Next to these
states, our circulation is largest in Idaho,
Montana, Utah and Colorado.

In this connection we cannot refrain
from saying that the big dailies in these
states, although it has been admitted
universally that "Better Fruit" has been
an important factor in the development,
betterment and building up of the fruit
business, seldom mention "Better Fruit,"

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no matter how valuable an edition may be, and when they do mention it, it is in the shortset possible terms. "Better Fruit" is a private enterprise for the good of the public, built up and financed by an individual, yet the Northwest states get the benefit, and we are of the opinion that the big dailies should support "Better Fruit" and use their influence to persuade fruit growers to subscribe to this paper for the betterment of the community and the development of the state.

Every fruit grower should attend the apple shows. They are both instructive and educational; they afford fruit growers the opportunity to get acquainted and to exchange ideas and learn what the other fellow is doing in his district. Several have already taken place this year; others are still to be held. The Spokane Apple Show is from the 14th to the 19th of November, and the Oregon State Horticultural Society and Apple Show is to take place at Portland from November 30 to December 2. Don't miss either, but if you cannot go to both, go to the nearest one. You won't regret it; you will learn much and have a good time. These cities are not dry.

◆ ◆ ◆

SHORTAGE IN BOXES.—Many fruit growers experienced difficulty in getting sufficient boxes to pack out their apple crop. The complaint was general and the trouble was due to the fact that the apple crop exceeded the growers' estimates. The trouble this year, as in

the past, is that the fruit grower is afraid he will have to carry over a few boxes, representing a few dollars. Every fruit grower should order early in the season sufficient boxes to pack out his entire crop, and, to be on the safe side, should order a few hundred extra. He can better afford to carry over 1,000 boxes, representing \$100, than to run the risk of having 1,000 bushels of apples without boxes to pack them in, representing a possible loss of \$2,000.

◆ ◆ ◆

MANY apple growers harvest next year's apple crop this year by knocking off the fruit spurs. Much care must be taken to avoid doing this. Whenever a fruit spur is knocked off it means that one or two apples from next year's crop are gone. We have seen over one hundred spurs on the ground under a tree, which means a two-dollar loss per tree next year.

◆ ◆ ◆

IT IS keeping the railroads pretty busy supplying cars, but the fruit growers need them, and at present the companies do not seem able to fill the bill. Build more cars for next year. We want to grow.

◆ ◆ ◆

THE fruit crop of the Northwest is increasing. It is apparent that the railways did not anticipate the size of the crop this year. There has been a continued shortage of cars; so far it has not been serious, still it is inconvenient, and if it continues there may be loss. It is

to be hoped that the railways will be able to supply cars rapidly to all districts from now on. From this year's experiences it would seem that the fruit growers and the railway companies should come into closer touch, so that the latter may have some correct idea of the quantity of fruit to be shipped and so be able to supply the necessary cars.

◆ ◆ ◆

ALBEMARLE PIPPIN.—One of our esteemed contemporaries pulls off a new stunt by producing Albemarle Pippins in color red all over. The Albemarle Pippin is a name given Yellow Newtowns grown in Virginia. It is picked when green and turns yellow on maturity.

◆ ◆ ◆

THE apple packing school is an insurance for a good pack. Many districts would have been short of packers this year had it not been for the apple packing school training packers in advance of the season.

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February 26, 1910.

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The Dalles, Oregon.

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Yours truly,

E. H. Shepard,
Editor "Better Fruit."



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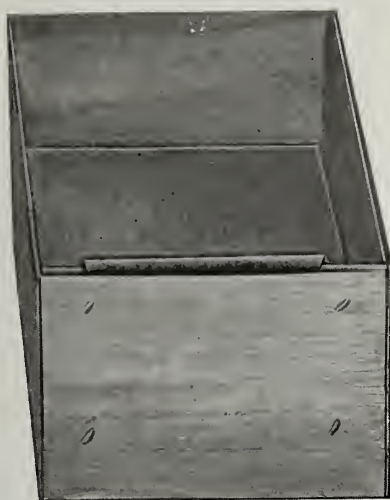
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Agents Spokane Territory:

WASHINGTON MILL COMPANY

Spokane, Washington



Langley, Washington, October 21, 1910.

Editor Better Fruit:

Your packing edition was a hummer, excelling even your previous good editions of the summer. As soon as I get time this fall I'm going out soliciting new subscriptions for you, and don't anticipate any difficulty getting them either. Meanwhile, for enclosed ten cents in stamps please send me another number of the packing edition. It is intended for missionary work in British Columbia.

Yours truly,

M. E. Hingston.

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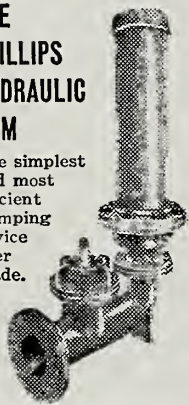
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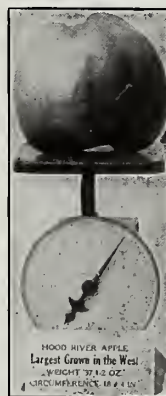
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Hood River, Oregon

CONTROL OF PEAR BLIGHT ON THE PACIFIC COAST

Continued from page 43

swung into line and are putting up a good fight. Very slight losses have occurred during the past two years, and these losses have been mostly in the villages and towns, and in the old home orchards, where it is difficult to make the owners see the necessity of cleaning up. The commercial orchards have done excellent work. Even the largest orchards in the valley have demonstrated the effectiveness of careful eradication. At this time it is a pleasure to visit them and see the heavily laden pear and apple trees with not a blighted spur or twig upon them.

The importance of the pear blight problem to the horticultural interests of

the Pacific Coast states emphasizes very clearly the value and necessity of plant pathological work. What each district needs is a strong man who is both scientific and practical, for handling such a difficult problem. Not only does each district need the constant and careful attention of a trained pathologist, but it needs inspectors and commissioners who will see to it that the horticultural statutes are rigidly enforced. If a grower chooses to lose his crop by any disease which is not considered contagious or spreading, and which may readily be controlled by simple spray treatments, it is his own lookout; but where his pears and apples are a source of general infec-



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tion from pear blight it becomes a matter for the district commissioner and local inspector. There is only one remedy, and that is to increase the inspection and to make it rigid. Perhaps one other thing might be added. It would be a wise plan for each county or district to appoint a large number of volunteer inspectors who would serve without pay in their own interest, but who would be vested with authority to inspect and condemn within their immediate neighborhood.

At this time the Rogue River Valley has the best equipment for fighting blight known to the country. In Jackson County alone, besides a pathologist in charge, there is a chief inspector and four deputies. These men report daily to the central office, and keep a careful record of their work. In addition, there are over fifty deputy horticultural commissioners, so distributed as to give each neighborhood one or more men who work in conjunction with the inspectors. These men are given full authority to enforce the horticultural laws. Being owners, they have a direct interest.

To those who have read the preceding chapters carefully, it may seem unneces-

sary to add anything more, as it is believed that all of the important facts about pear blight have been clearly stated. However, a resume will bring before us all the pertinent facts so that the reader may see at a glance what he may want to know without reading the text again.

1. The history of pear blight dates from the year 1780; the first record was published in 1794 in the transactions of the Massachusetts Society for the Promotion of Agriculture. This first paper on pear blight gave to the highlands of the upper Hudson the distinction of being the birthplace of the disease. However, at the time of the discovery, the disease had a wider spread throughout the New England states than has been recorded.

2. The disease known as pear blight is not known outside of North America. Europe, Asia, Australia and all other parts of the known world are free from the disease.

3. The true character of the disease was worked out by Professor T. J. Burrell of the University of Illinois, in 1878, and was published to the world in 1880. Dr. Burrell found that the disease is

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caused by a small germ belonging to the great family of bacteria, which are minute, microscopic plants, the smallest vegetable organism in the world. The pear blight bacillus is only $\frac{1}{50,000}$ of an inch in diameter and about $\frac{1}{25,000}$ of an inch in length; under the microscope, when magnified 1,000 diameters, its appearance is that of a hyphen (-).

4. The pear blight germ attacks all species belonging to the pome or apple family, and also in a small way infects plums and the apricot. Among the cultivated fruits, therefore, it attacks the apple, pear, quince, loquat, plum and apricot. The following wild fruits indigenous to the Pacific Coast states are also attacked by it. I shall give the common names and after them the botanical or scientific names, so that students of botany may be able to look them up:

- (a) Service berry or June berry (*Amelanchier alnifolia*).
- (b) Thorn apple or haw (*Crataegus douglasii*).
- (c) Christmas berry or Toyon (*Heteromeles arbutifolia*).
- (d) Wild pear or apple (*Pyrus rivularis*).
- (e) Mountain ash or rowan (*Sorbus occidentalis*).

There are many more species of the above genera to be found in the Eastern and Southern states, but a knowledge of the fact that all pome fruits blight should be sufficient.

5. The damage by blight in the Eastern and Southern states has been such

HOOD RIVER APPLE LAND CHEAP

The impression has gotten abroad that a man must be a millionaire to buy land in the Hood River Valley. This is not so. While our bearing orchards are paying a net income on several thousand dollars per acre, there is still left thousands of acres of uncultivated lands that can be had at low prices. This land when put in cultivation increases in value at a very rapid rate.

We have for sale some of the finest unimproved apple land in the Hood River Valley, at prices as low as \$50.00 per acre.

F. R. Brydle Co.

Apple Growers Bank Building, Hood River, Oregon

Please send me handsome illustrated booklet of Hood River Valley and list of properties.

Name

Address



Hood River Yellow Newtowns

10 or 20 Acres

Of the finest four-year-old orchard in the

Famous Hood River Valley

\$800 PER ACRE

Write for particulars

SHELLEY & SHELLEY

HOOD RIVER, OREGON

25 years in Hood River



Hood River Ortleys

that practically all of the better varieties of pears have gone out and commercial pear growing is an industry of the past.

6. The blight has spread into every known section of the United States, Southern Canada and Northern Mexico; only a very few small districts still remaining free from it.

7. The first appearance of the blight is made evident by the blossoms and young shoots becoming withered and black, finally drying up. Later, branches and limbs, as well as the bodies and root system, become infected. Even the fruit may become infected and wither away.

8. The infections first noted in the spring come from hold-over cases which have resulted from the previous year's infection. These hold-overs may be found in the larger limbs, bodies and roots of the pear, apple, quince, loquat and even our wild fruits, though less frequently. During the blossoming period these hold-overs ooze and this gummy substance, which is filled with the bacteria, become points for the starting of new infections in the blossoms and twigs.

9. The germs from the hold-overs are carried about by bees and other insects.

Biting and sucking insects cause infections in the young twigs, and even the bodies. Sapsuckers, or woodpeckers, may also spread the blight. The use of pruning tools, not disinfected, also spreads it. The blight may also enter small growth cracks in the twigs, limbs, bodies and roots, and through crown galls.

10. Weather conditions favor the spread of blight, as well as favoring infection. Dry weather tends to prevent, not only the spread of infection from tree to tree, but also the spread of the disease in the tree itself. It is as easy to understand this as it is to understand that dry weather prevents growth and germination of seeds and plants.

11. Thunder, lightning and other atmospheric disturbances have no influence whatever on the disease known as pear blight. The precipitation which accompanies them is the only factor besides warmth.

12. The only way to control blight is to remove all cases of hold-over before the blossoming period begins. Hold-overs removed during the blossoming period do not insure that some infec-

tion has not taken place from them. To remove hold-overs, or rather to find them, on the rough bodies use a gouge or some other instrument with which to expose the tissues beneath. A water-soaked, reddish condition of the soft bark indicates infection, which should be antiseptically removed.

13. The antiseptic to be used should be bichloride of mercury, or corrosive

COMMON SENSE IN CANNING

Our book tells how to can anything and everything. There's money in canning if you know how. Sent postpaid on receipt of price, ONE DOLLAR.

THE CANNERS SUPPLY COMPANY

120 N. Main Street

Los Angeles, California

J. F. LITTOOY

CONSULTING HORTICULTURIST

Orchard director, orchard schemes examined, orchard plans submitted, orchard soils and sites selected, nurseries visited and stock selected, values examined for farm loans, purchasing agent for land and orchard investments, acts as power of attorney in selection of Carey Act lands.

MOUNTAIN HOME, IDAHO



THE HOOD RIVER DISTRICT LAND CO.

HOOD RIVER, OREGON

Can supply you with a great variety of the very best

APPLE LAND

In the Famous Hood River Valley and District

If you live here the union will pack your fruit like this, and will place it in the big markets of the world.

And The Hood River District Land Company will sell you the land on the best terms possible and at the most moderate prices.

Anything from raw land at \$50 an acre to a fully developed orchard at prices which we will quote you upon application.

COMMUNICATE WITH US

SMITH BLOCK, HOOD RIVER

LONG DISTANCE TELEPHONE 175

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

APPLES

PLUMS

PEARS

PEACHES

PRUNES

JONATHAN NEWTOWNS



A Promise of Good Returns

The Land of Opportunity

LOCATED across the Columbia River from Hood River, Oregon, the White Salmon Valley offers the greatest opportunities of any land on earth to fruit growers. Where apples, cherries, pears, peaches, prunes and strawberries grow to perfection. A few dollars invested in fruit land today will return to you in a very few years sixty-fold. The soil, climate, water and scenery are unsurpassed by that of any country. Build a home where you can enjoy peace and plenty the remainder of your life.

We have some bargains in orchard and general farm lands in and near White Salmon, also large and small bodies of timber land, cheap.

WRITE US FOR DESCRIPTIVE MATTER AND PRICES

Estes Realty & Investment Co.

White Salmon, Washington

SPITZENBERG WINESAPS

BERRIES

CHERRIES

STRAWBERRIES

NUTS

sublimate, and use no other. This disinfectant should be used at a strength of one to 1,000, or perhaps stronger, but never weaker. The use of the various substitutes is a senseless practice, as there is nothing cheaper or more effective as a disinfectant than bichloride of mercury. It is a deadly poison and must be kept away from children, and the containers should be plainly labeled so that unsuspecting persons may not be poisoned.

14. There are no remedies for pear blight, and all so-called patent washes or other "remedies" should be avoided.

Anyone who claims to have a cure for pear blight is a "fake," and should be treated accordingly. Those having "remedies" for sale have no standing whatever; if they had they would not oppose every scientific fact known.

15. Summer cutting of blight should always be done, but the work, to be effective, must be done carefully. Always be sure to get below or above the point of infection. If infection is found in a fruit spur or water sprout never break them off unless you know how far the infection has gone. There is no further danger in the dead spur, but rather in

the infection which has advanced beyond it. Breaking off the spur and then applying the disinfectant is not eradicating the blight. Never leave an infection until you know that there is no further danger from it. Remember that there is no such thing as "pretty good work;" the work is either good or bad.

16. In order to render the fighting of pear blight more easy, trees should be pruned in the vase or open head form. Never grow a tree with a main leader or center. Keep all water sprouts and fruit spurs off the body and main limbs of the tree. Let no water sprouts come up

Irrigated Orchard Tracts Rogue River Valley



COMPLETED SECTION OF NEW CANAL. ROGUE RIVER VALLEY CANAL COMPANY. WILL IRRIGATE FIFTY-FIVE THOUSAND ACRES

WRITE FOR THREE REASONS WHY THE ROGUE RIVER VALLEY IS ENTITLED TO BE CALLED THE BEST FRUIT DISTRICT IN AMERICA.

It won the Grand Sweepstakes Prize at the Spokane National Apple Show, and has been declared by government experts to be the most perfect fruit belt in the world.

Every acre of our irrigated orchard tracts carries with it a perpetual water right.

We plant and care for orchards on the yearly or monthly payment plan.

If you would succeed from the start, come to a proven district.

WRITE US FOR FULL INFORMATION

ROGUELANDS INC.

Fred N. Cummings, Manager
MEDFORD, OREGON

"OREGON IS THE PLACE FOR ME"

PORTLAND COMMERCIAL CLUB Portland, Oregon

Send me specific information about what Oregon has to offer

- | | |
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| <input type="radio"/> Apple Orchardng | <input type="radio"/> Hotels |
| <input type="radio"/> Pear Orchardng | <input type="radio"/> Resorts |
| <input type="radio"/> Peach Orchardng | <input type="radio"/> Schools |
| <input type="radio"/> Prune Orchardng | <input type="radio"/> Railroads |
| <input type="radio"/> Live Stock Raising | <input type="radio"/> Towns |
| <input type="radio"/> Poultry Raising | <input type="radio"/> Mining |
| <input type="radio"/> Truck Farming | <input type="radio"/> Manufacturing |
| <input type="radio"/> Walnut Culture | <input type="radio"/> Water Power |
| <input type="radio"/> Wheat Growing | <input type="radio"/> Merchandising |
| <input type="radio"/> Dairying | <input type="radio"/> Berry Growing |
| <input type="radio"/> Timber | |

Name

Street

Town

State

That's what you'll say when you learn specifically just what opportunities Oregon can offer you in *your own line* of endeavor.

The Portland Commercial Club will lend you all the assistance within its power to make you thoroughly acquainted with the possibilities Oregon offers you in your own line. It will tell you specifically what inducements different sections of the state are offering.

In manufacturing—in dairying—in agriculture—in fruit raising—and all other lines, Oregon offers splendid opportunity for great and successful achievement.

Take out your lead pencil or pen—look down the list of industries, and in the little circle opposite the business that interests you most, make a mark, clip out the list and mail it in. In return you will receive valuable and specific information regarding those sections of Oregon peculiarly adapted to your special line. Write a personal letter. Ask questions that come into your mind. They will all be answered fully and comprehensively. Check the list now while you have it in mind.

Portland Commercial Club Portland, Oregon

from the crown of the tree or the root system. Be sure to cut out all crown galls.

17. When blight is prevalent or when seasons conducive to blight occur, extreme caution should be used in the matter of using stable manure, commercial fertilizer or applying too much water. Irrigation practice should be studied carefully, not only in connection with blight control, but with benefits or injuries which may result to the soil.

18. The only way to keep blight under control is to increase the inspection and make it rigid. If a grower is caught experimenting, or not following out the directions for eradicating blight according to the letter of the law, force him by law to do what the inspector has ordered.

I believe that besides the regular corps of inspectors we should have volunteer inspectors who will look after their own interests by investigating the condition of neighboring orchards. Their appointment may be made in the regular way, making them officers of the law having the right to enter upon a neighbor's premises. If this had been done in certain districts the past year, several infection centers would have been wiped out. There would have been no infection and a good many dollars saved.

19. Lastly, in closing permit me to say that as individuals you have a right and a duty to follow the advice and instructions which have been given you for eradicating and controlling blight. A Government officer, who has had tech-

nical and practical experience all over the United States for a period of years, certainly knows the situation, and there is no reason for doubting his words.

As a friend, I ask you all not to trifle with blight; it is too serious a matter. The value of the fruit interests is too great to be trifled away by individuals who have neither knowledge nor practice sufficient to devise more efficient means than have already been worked out by the pathologists of the United States Department of Agriculture, whose entire energy is given to the practical side of fighting diseases. You have a United States Department of Agriculture, therefore, respect the advice it is able to give you through its agents.—Copyright 1910 by Medford Mail-Tribune.

JAMES J. HILL SAID OF

The Willamette Valley, Oregon

"You have a valley here which is the most wonderful I have ever seen. * * * In this valley a man can make \$5,000 a year from off ten acres."

We are selling Willamette Valley Fruit Lands, which are being developed under the supervision of Hon. W. K. Newell, president of the Oregon State Board of Horticulture. Call on or write us for particulars.

THE A. C. BOHRNSTEDT COMPANY

629 Palace Building
MINNEAPOLIS, MINNESOTA

CRESWELL, OREGON

302 U. S. National Bank Building
SALEM, OREGON

Own an Orchard *in the* Great Spokane Country

OPPORTUNITY

only three miles from Spokane—where hundreds of people are now making money in the fruit industry.

The orchard land at "Opportunity" is one hundred per cent productivity. In other words, every foot of land at "Opportunity" is cultivated and will produce the highest grade apples, pears, peaches and other luscious fruits that can be readily marketed at good prices. "Opportunity" is a modern, up-to-date irrigated orchard district, with electric lights, telephone service, direct railroad transportation facilities, and all conveniences such as schools, churches, etc.

Opportunity Fruit on Exhibition

We will have an exhibit of "Opportunity" fruit at the Spokane National Apple Show November 14 to 19, 1910, likewise at the Chicago Apple Show December 4 to 9, 1910. Ask for our illustrated booklet, prices and selling plan, all of which will be cheerfully sent free upon request.

Gentlemen: Please send me your booklet about "Opportunity."

Name

Address

Modern Irrigation and Land Co.

P. A. Summerland; General Sales Agent

326 First Avenue

Spokane, Washington

OKANOCHAN APPLE LANDS

Of the Famous Sin-la-he-kin Valley

We have recently purchased three thousand acres of "allotted" Indian land in this valley, all of which produces the finest flavored and highest colored apples grown. This land was allotted in 1885 to the Moses Indians in tracts of 640 to 2,200 acres, and was selected on account of the mildness of the winters, and will grow any fruit or vegetable grown north of California.

The elevation of this land is 1,200 to 1,700 feet, and 250 to 300 days of sunshine guarantees the high color of the fruit grown in this beautiful valley. Seventy-five per cent of every tract is ready for cultivation.

We have just finished planting sixty-five acres, and wish to continue the development of this property, and will for this reason sell thirty ten-acre tracts for \$125 per acre, this price to include a perpetual water right for the complete irrigation of the purchased land. Payments to be made half down and the balance in one or two years, with eight per cent interest on deferred payments. These lands have been passed upon by the Washington Horticulturist as being as high grade apple land as there is in the state. For descriptive article see another page of this edition.

If Interested Write to

T. Ernest Oates

or

Geo. J. Hurley

561 East Ankeny Street, Portland, Oregon

Loomis, Washington

Always Remember

Scenic beauty ;

Intellectual and cultured people ;

Ideal climate, soil and balanced rainfall ;

Absolute organization among the growers (they own their own irrigating systems, shipping warehouses and cold storage plants) ;

Highest returns ever received obtained annually ;

Spitzenbergs and Yellow Newtowns having

QUALITY
QUALITY
QUALITY

Any one of these may be found in some other fruit section,

But,

They can only all be found in

Hood River, Oregon

The handsomest booklet ever published, describing Hood River, will tell you why and how.

Secretary HOOD RIVER COMMERCIAL CLUB will gladly send it to you.



MAXWELTON ORCHARD Hood River, Oregon

THIS strictly first-class bearing orchard, one of the finest in the famous Hood River Valley, is offered for sale. The property comprises 51 acres of tested volcanic ash fruit land, 30 acres being in apple orchard of commercial varieties. Produced tremendous crop this season. It is located on the river bench two miles east of town. Macadam road and an abundance of water. Two streams through place, and the view of snow mountains and river is unsurpassed in this valley of wonderful scenic beauty. Maxwellton embraces every feature for an ideal country estate and is a proven income investment. Fine apple house and other necessary buildings, stock and full equipment. If you want a paying orchard and a beautiful place to live, your thorough inspection is invited. Call or address

MARION MacRAE, MANAGER

MAXWELTON ORCHARD, HOOD RIVER

You Know Hood River?

The man who has investigated the raising of APPLES knows that the Hood River Valley produces the BEST APPLES in the world

HOOD RIVER "The University of Apple Culture"

Has made fruit growing by scientific methods a most profitable business proposition.

If you would be aided in raising apples by the experience of the best orchardists, come to Hood River.

THE HOOD RIVER APPLE ORCHARDS COMPANY controls a number of the best selected tracts of raw land in the HOOD RIVER VALLEY. These lands are being sold in 5 and 10-acre tracts at a very low price, which includes the planting and caring for the orchards for five years. The tracts are not being sliced from an immense wild acreage indiscriminately, but the lands have been carefully selected by the managers of the Company, who are themselves experienced Hood River orchardists, and much of the adjoining property has already been cleared and set to trees.

MR. GEORGE I. SARGENT, a practical horticulturist with many years' experience in Hood River, will superintend the planting and caring for the lands.

The terms on which these tracts are being sold are most reasonable, the payments extending over a period of five years. The buyer may have two years during which to inspect his tract, and if he does not find it satisfactory, as represented, the Company stands ready to refund his money and take back the orchard.

FOR FULL PARTICULARS WRITE TO

Hood River Apple Orchards Company, Hood River, Oregon



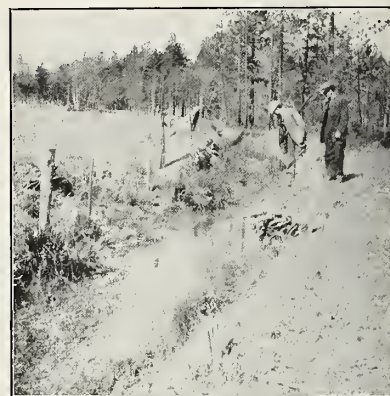
Rogue River Valley Southern Oregon

This 80-acre tract in the best red soil district, within 3 miles of a railroad station, adjoining larger tracts for subdivision, on main county road, with about 100 bearing trees of family orchard. About 40 acres cleared, 20 acres more nearly cleared, three-fourths of which is to come under ditch, at \$100 per acre, if taken at once. Reasonable terms.

A. N. PARSONS, Grants Pass, Oregon

References by permission:

First National Bank; Grants Pass Banking & Trust Co.



WANTED, A PARTNER

I own 80 acres of fine fruit land in Hood River Valley. I want to move onto this land, develop it and bring it to bearing. This will cost approximately \$10,000, and to the man who will furnish that amount in annual installments covering five years I will deliver title to 40 acres of orchard at the end of five years. This will make five-year-old orchard cost \$250 per acre. References and security furnished. **Owner 80 Care Better Fruit**

ORCHARD FOR SALE

322 acres of finest fruit land, near depot; never-failing springs of soft, pure water; 600 bearing apple trees, some yielding 16 barrels; fancy fruit has sold for \$4.00 f.o.b. a box. Fine crop for four successive years. 2,000 young apple trees, 2,000 Elberta peaches; first crop this year averaged over \$2.50 per 6-gallon carrier in New York City, ten hours distant. Well fenced; four small dwellings, etc.

Oregon cannot grow an apple that equals in flavor and quality the fruit of this orchard—Queen Victoria's favorite, the Albemarle Pippin.

Price \$100.00 per acre. Will sell whole or part. Come and see.

Orchardist, Charlottesville, Virginia

WHAT \$100 WILL DO FOR YOU IN TEXAS

It will buy one gold bond bearing eight per cent interest and \$50 stock in new company and one town lot in Aldine, near Houston, the greatest city in the Southwest. Terms either cash or monthly. Full particulars free. Address E. C. Robertson, general sales manager, 501 Kiam building, Houston, Texas.

THE MIRACLE OF WATER

Millions of acres of raw land are being reclaimed in the West by irrigation. Water makes this desert waste the most fruitful land in the world. No magician has wrought such wonders with magic wand. Interested? Send the coupon.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents, for which please send me three recent numbers telling about the Miracle of Water.

Name _____

BF Address _____

HORTICULTURIST WANTED

We have under development 1,000 acres of fruit land in one of the very best districts of the Willamette Valley. We expect to develop more. We want a scientific and practical horticulturist; one who can handle men and get things done, as well as know theoretical part of the business. We also want a man who is willing to invest some money in the business in order to show us his faith in his own ability to make money out of an orchard. The job will last indefinitely to the man who will make good, but will not last two weeks to the fellow who cannot make good. The salary will not be high to start with, but there is no limit to the fellow who can keep increasing his efficiency. We would rather pay a man \$2,500.00 or \$3,000.00 a year if he earned it, than \$1,200.00. If you would like to join people who are willing to pay you all you earn, but who expect you to earn all you get pay for, write us, Z. C., immediately, in care of the Better Fruit Publishing Company, Hood River, Oregon.

FOR SALE

By owner, 120 acres best fruit and alfalfa land, four miles from Hanford, Washington, on Columbia River. It cost me this year \$278 to water 60 acres orchard and alfalfa. Price \$12,000, part cash. Address Box 63, Hanford, Washington.

WANTED

10,000 CHAMPION GOOSEBERRIES, two years, No. 1; 5,000 one-year, No. 1. Please quote.

MOUNT ARBOR NURSERIES

Shenandoah, Iowa

FOR SALE

Choice ten-acre tracts Okanogan fruit land. First-class upper bench, near government canal; 1,280 feet altitude. Well water in gravel, thirty feet, pure. Planted to yearling apple trees; best red winter commercial varieties; also tracts not planted. Ready to irrigate. Great Northern Railroad now building in Okanogan Valley. Prices and terms right.

W. E. KIRKPATRICK

Epley, Wash. Okanogan County

SAVINGS INVESTED IN REAL ESTATE

Put your money in residential building lots. Be sure they are in improved sections. Buy close to a big city. Purchase early; don't let others make profits out of you. The greatest fortunes were made by realty investments. We will offer 1,000 choice building lots on December 1, at prices that will pay very handsome profits. Terms of purchase, \$25 cash, per lot, balance in thirty-six equal payments. No interest or taxes during this period. If you die before completing your payments, a deed is given your heirs, without further cost. Size of lots, 25x120 feet and upward. Price of lots, \$75 and upward, according to location. By investing in land you own something for your money. Investments in stocks or savings accounts are under the control of others. We guarantee you a profit of at least 25 per cent for the first year. Subscription lists are now open. By remitting us \$10 per lot, subscribers get first selections. The first 500 subscribers will also receive a credit of 10 per cent on their purchase. Act now. Let us make money for you and protect your savings.

We want agents in your locality. Write us the names and addresses of some of your neighbors. Do it now.

Buffalo Land Security Co.
Ellicott Square Buffalo, N. Y.

ORCHARD STOCK FOR SALE

For further development a small amount of stock may now be obtained in a first-class commercial orchard company in the Hood River district. Lands highly improved under the most scientific direction. For further particulars, address

ORCHARD STOCK

Care Better Fruit Publishing Company
Hood River, Oregon

Earl Wood J. W. Merrifield Geo. L. Robinson

APPLE AND FARM LAND CO.

City Property

SPECIALTY MADE IN FRUIT LAND

5 and 10-acre Tracts

Home Phone Main 661
Bell Phone Main 1

Main Street, Silverton, Oregon

Cold Storage for Apples

We are prepared to handle any quantity of apples in our Cold Storage Plant. Rates according to quantity. Tell us how many boxes you want stored and we will quote you prices

Independent Coal & Ice Co.
Portland, Oregon

It's a Mathematical Proposition

THAT

$$\text{GOOD FRUIT} \div \text{GOOD CUSTOMERS} = \text{GOOD MONEY}$$

It is up to every shipper to grade and sell his fruit according to Produce Reporter Grades and Trading Rules. Then his customers know what to expect, both as to the quality of the fruit and as to the Trade Rules that shall govern if any difference arises. Thus, both parties arrive at a common understanding, at the beginning of the deal, which does much to prevent future trouble.

Now as to the second factor in the equation, viz., good customers. The desirable customer is the one who has established a reputation for honorable treatment of his distant customers. The Produce Reporter Co.'s first object is to secure in its files the antecedent and to-date business history of all wholesale fruit and produce dealers (and allied lines) and to rate them accordingly by the following key:

XXXX, Excellent; ship open.

XXX, Good; ship draft on bill of lading.

XX, Fair; perhaps draft on bill of lading, perhaps bank guarantee, according to circumstances.

X, Cash before shipping.

X—, Let strictly alone.

The moral effect of this rating system is alone a powerful protective influence; add to it a well equipped Adjusting Department, prepared to inspect and adjust disputed shipments anywhere in the United States, and it completes a system worth your investigating.

ADDRESS EXECUTIVE OFFICES OF
PRODUCE REPORTER COMPANY
34 South Clark Street, Chicago, Illinois

OKANOGAN VALLEY FRUIT GROWERS' ASSOCIATION

OKANOGAN Valley Fruit Growers' Association has been organized at Okanogan, Washington, with these permanent officers:

President, B. L. Smith; vice president, S. S. Bunn; secretary-treasurer, J. C. Gay; directors, I. W. Smith and S. G. Duley and the executive officials.

The association will be incorporated under the laws of Washington to buy, sell and handle all kinds of fruits and vegetables and field and garden products, also to buy, sell, rent or lease land, cultivate orchards and vineyards, manufacture boxes and buy and sell machinery, implements and seeds, and ship on commission orchard and farm products and establish agencies and distributing points anywhere in the United States.

"The formation of the organization marks the point where we have passed from the experimental stage," said Pres-

ident Smith, "and indicates we are prepared to place before the buyers of the world the big red apple of Okanogan, which, when stamped with the official seal and approved by the association, will be known as the peer of its kind."

"The primary object, of course, is the development of the Okanogan district and its resources, the protection of the fruit growers and the making of a reputation for the Okanogan apple which will take it into the markets of the world, guaranteed as to quality by the indorsement of the organization. The Wenatchee grading rules have been adopted."

Negotiations are already under way to dispose of about 8,000 boxes of fancy and extra fancy apples grown in the valley this season and it is expected to conduct business on a more extensive basis in 1911.

◆ ◆ ◆

Almost the whole world knows of Hood River as a place that produces the best fruits, and all of Hood River Valley should know, and could know, that there is one place in Hood River, under the firm name of R. B. Bragg & Co., where the people can depend on getting most reliable dry goods, clothing, shoes and groceries at the most reasonable prices that are possible; try it.

T. O'MALLEY CO.

COMMISSION MERCHANTS
Wholesale Fruits and Produce

We make a specialty
in Fancy Apples, Pears and
Strawberries

130 Front Street, Portland, Oregon



THE horse does all the work, except holding the pole, with the H. P. SPRAMOTOR. It can be operated by either horse or hand. Has eight nozzles at 175 pounds pressure, which practically smoke the tree with spray. All automatic. The number of nozzles can be arranged to suit size of trees. The largest tree may be sprayed. Same price for one or two horses.

The H. P. SPRAMOTOR can be arranged for vineyards, row crops, strawberries or grain crops. The nozzles will not clog. Agents wanted.

Get our free Treatise on Crop Diseases.

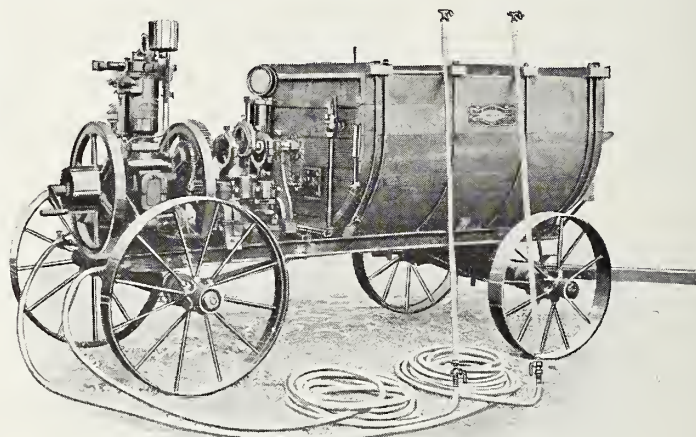
R. H. HEARD

1333 ERIE STREET, BUFFALO, NEW YORK

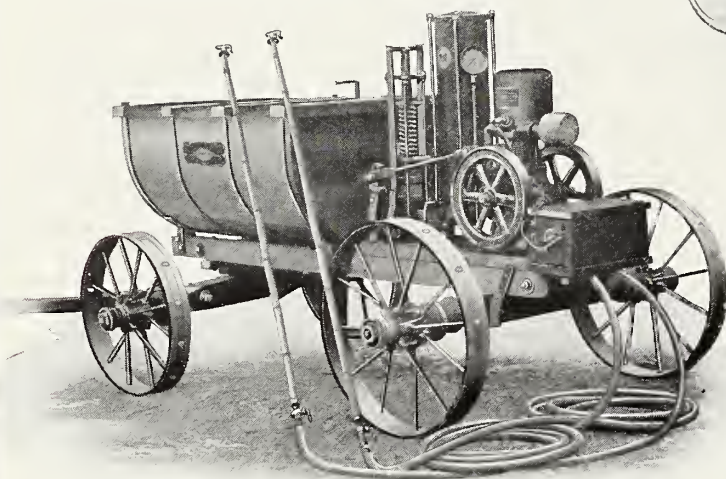
BEAN POWER SPRAYERS

Strong Compact Light Weight Efficient Durable

THE BEAN GIANT OUTFIT NO. 124—For use when an outfit of the largest capacity and highest quality is desired. Weighs 450 pounds less than last year's outfit, yet is just as substantial, rigid and durable. All-steel platform, instead of wood. Low truck, which means easy hauling and perfect adaptability to hilly ground. It has a capacity of from $7\frac{1}{2}$ to $10\frac{1}{2}$ gallons a minute at a constant pressure of 200 pounds. Write to us or see your nearest Bean agent.



The Bean Giant Outfit No. 124



The Bean Pony Outfit No. 140

BEAN POWER SPRAYERS HAVE high or low wheels; wide or narrow tires; cover or no cover; two or four lines of hose; one, two or three horsepower engine; wagon with or without brake; magneto or battery; any kind of spray nozzles; any length of spray rods or hose; and almost any equipment you may want.

SEND FOR OUR 1911 CATALOG—It is the most complete book on hand and power sprayers we have ever issued. Illustrates and describes in detail our new Pony Outfits, the Bean Giant, the Challenge, the Bean Magic, and all our outfits, new nozzles and accessories. Send your name for a free copy.

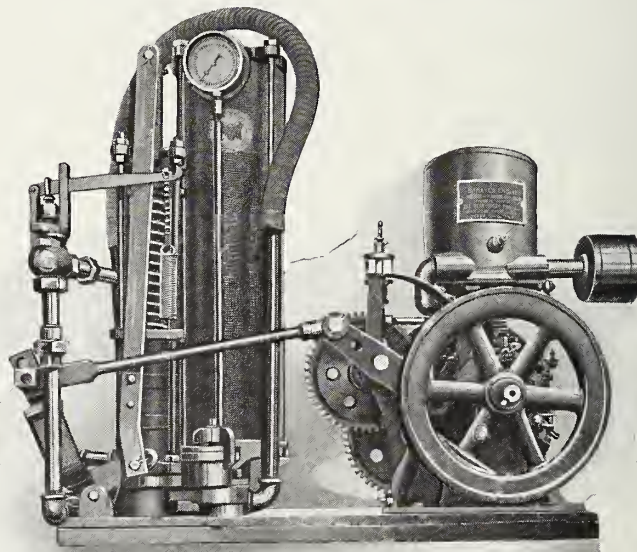
Bean Spray Pump Co.

SAN JOSE, CALIFORNIA

Also Cleveland, Ohio

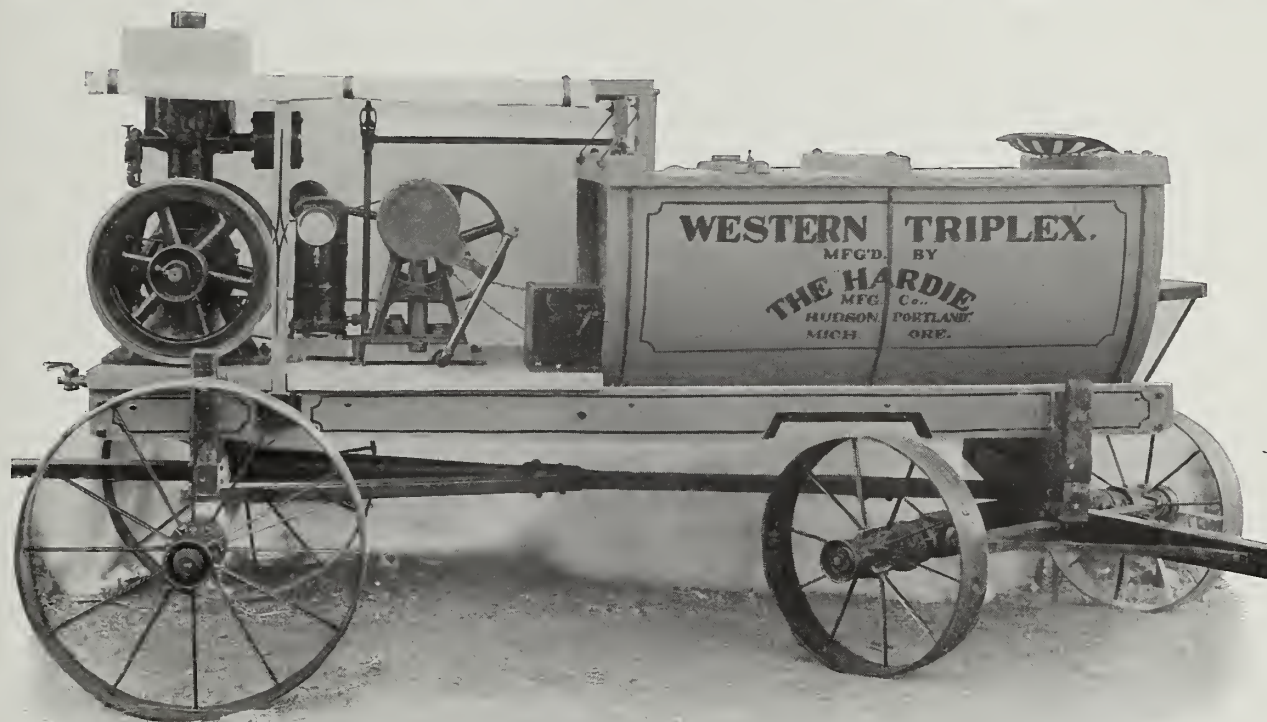
THE BEAN PONY OUTFIT NO. 140—A perfect power outfit for small and medium sized orchards. It will supply two large nozzles at heavy pressure. Sets low down and can be hauled wherever you can take a hand sprayer. Weighs but 1,175 pounds, including truck and all. Thoroughly high grade. The most efficient low-priced power sprayer on the market.

THE BEAN PONY OUTFIT NO. 142—Same as Pony Outfit No. 140, without truck and tank. Our superior $1\frac{1}{4}$ -h.p. Sprayer Engine attached to a Magic Power Pump. Total weight but 425 pounds. Small base. Capacity of $3\frac{1}{2}$ gallons a minute at heavy pressure.



The Bean Pony Outfit No. 142

The Hardie Triplex



From Maine to Washington, the Hardie Triplex Sprayer is working successfully. Our model for 1911, shown in the cut above, gives you an idea of the completeness of this machine.

Small details, which tend to perfect it in usefulness and completeness, are carefully looked after.

We give you a machine ready to run every minute you need it, doing efficient work for you all the time, and with

Nothing to Watch but the Spray

Light in weight, compactly built, efficient in every way, don't buy till you see the HARDIE TRIPLEX.

Our new catalog is now ready, showing over twenty different styles of hand and power spraying machines, nozzles, hose, etc.

Last spring when looking for a sprayer we looked at all the sprayers on the market and decided on the Hardie as being the machine suitable for our work. Before buying we were told by some that the brass cylinders on the Hardie pump would not last and would be soon eaten up by the action of the spray material. After a season's use we can say that the cylinders are as good as when the machine was taken out. The machine has been exceedingly satisfactory in every respect and has done all you claimed for it. You may use our names as reference at any time.

Wenatchee, Washington.

P. J. Morris.
J. R. Phipps.

The Hardie Triplex Sprayer I purchased this spring has given the best of satisfaction and I do not hesitate in recommending it to every one as the best power sprayer on the market. On account of its low build and light weight it can be taken into orchards where no other power sprayer would go without tearing the trees and knocking off the fruit. I have not paid out one cent for repairs this year.

Dr. H. J. Whitney.

Cashmere, Washington.

Send for Our Catalog Today

The Hardie Manufacturing Company

Hudson, Michigan

49 Front Street, Portland, Oregon

Parties Anticipating Preserving Fruits or Vegetables

or other products, for consumption or exhibition, should send 50 cents to A. W. Miller, 69 Fifth street, Portland, Oregon, for a copy of his booklet, entitled, "How to Preserve Food Materials for Display or Consumption," containing some twenty-eight formulas for preserving fruit and vegetables, five for preserving fish, five for meats, and several for preserving eggs and milk, besides telling when, what and how to select your material, and how it should be handled, the size and pattern of jars best suited for certain material, also giving some fifteen valuable hints and helpful suggestions for success.

The PARIS FAIR

Hood River's largest and best store

DRY GOODS SHOES, CLOTHING

We are offering some extra specials in our Clothing Department. Ask to see them

Try a pair of American Lady \$3 and \$3.50 Shoes, or American Gentleman \$3.50 and \$4

THINGS WE ARE AGENTS FOR

KNOX HATS

ALFRED BENJAMIN & CO.'S
CLOTHING

DR. JAEGER UNDERWEAR

DR. DEIMEL LINEN MESH
UNDERWEAR

DENT'S and FOWNES' GLOVES

Buffum & Pendleton

311 Morrison St., Portland, Oregon

THE APPLE MAN

Read at Banquet International Apple Shippers' Convention, Niagara Falls, August 5, 1910.

When fruit is good and prices are low:

When commerce goes on with a generous flow;
When consumers on dealers their favors bestow;
It is fine to be an "Apple Man."

When fruit is bought at a reasonable price,
And packed with a care that makes it nice,
Consumers appreciate your efforts and mine,
And keep things busy along the line,
Then, it is great to be an "Apple Man."

When prices start off at a dollar to two,
Everybody eats apples (and so do you).
The autumn consumer cultivates a taste,
Which markets the crop without losses or waste;
Then it is an honor to be an "Apple Man."

When buying is based on supply and demand,
And packing is done—the best in the land;
When sanity and sense your actions control,
The wheels of commerce will continually roll;
Then it is wise to be an "Apple Man."

When the honest old farmer is willing to take
A price that is fair, and a decent assortment
allow you to make;
Your wife and your children may have plenty to
eat;
And all may wear clothes both comfortable and
neat,
Then it is a privilege to be an "Apple Man."

But when growers become speculators and selling
stops,
And farmers grow whiskers and talk of the
shortness of crops,
And newspapers all publish it in headlines so big
That consumers get frightened—then up is the
jig,
It is bad then to be an "Apple Man."

When plungers begin to hellow and shake,
And imagine how much profit they surely can
make,
By buying and storing at an extravagant price,
It is dangerous, sure, and not very nice,
To be an "Apple Man."

When horns in the place of shaggy coats grow;
And plungers, their autos make ready to go;
When sense and sanity are thrown to the winds,
With "tree-run" buying, the slaughter begins,
Then you had better be anything than an "Apple
Man."

Reports that buyers have thus run amuck,
Soon spreads to the grower, and to the raiser of
truck,
What results will follow you plainly may see,
Great losses for all there surely will be,
Then it is foolish to be an "Apple Man."

When "Farmer Jones," bewhiskered but shrewd,
Under the trees in his orchard stood,
And three autos (each with a plunger) he sees at
his door,
He snappishly says "Waal, I think I'll not sell,
but store."
It is wise then to let him be the "Apple Man."

When fruit in the fall brings twice it is worth,
When consumers are cheated by cries of a dearth,
Rent your storages for what they will bring,
And then you will have money left in the spring.
Then you are a wise "Apple Man."

But just as sure as you plunge and you shake,
Fearing you won't get fruit for high prices to
take,
You'll lose what you've got by labor and toil
To the banks who aid you, or to the tillers of
the soil.
It is hell then to be an "Apple Man."

Truth is the truth, whether expressed in story or
song,
Logic is logic, and never is quite wrong.
Apples are a necessity, but by a turn of the dice,
You can make them a luxury, by raising the
price.
It is well to be a thoughtful "Apple Man."

"The consuming public"—your court of last resort,
When it asks for apples, answer not with quick
retort.
Feed it, cultivate its taste, cater to its desires,
And charge it for fruit, only what equity and
honesty requires.
Then you will be a useful and a successful "Apple
Man."

By Emory C. Cook, Baltimore Maryland.

TWENTY-EIGHT hundred acres adjoining Ashland on the north have been sold to a Chicago syndicate for approximately \$400,000. The sale was made by M. C. Miller, who purchased the property from F. B. Waite, the founder of the town of Sutherlin.

This is one of the biggest sales of real property, both in the matter of acreage involved and the price received that has ever been made in the valley. The land is known as the Ashland orchard tracts.

The purchasers of the tract are the members of a syndicate, composed of the most prominent business men of the City of Chicago. The syndicate is headed by J. N. A. Spence.

Comprehensive plans have been formulated for the development of the property. A complete system of roads and boulevards will be built. This work was started by M. C. Miller this summer, and will be continued by the new owners.

The land lies on the slopes to the north of Bear Creek, just north of the City of Ashland, and is especially adapted to the growing of fancy fruits. Some of the prize-winning orchards of the valley are located in proximity to this land.

E. J. Wilber, formerly of Chicago, has arrived in Ashland and will have charge of the development and sale of the land. It is to be put on the market at once and sold in small tracts. An extensive advertising campaign will be carried on which will boost the entire valley. A branch office will be maintained in Chicago.

The development of this large tract and the settlement of it by many families will mean much to the city of Ashland, as well as the entire valley. The thorough publicity campaign that will be carried on will bring many new people to the country.

The history of this tract of land shows the rapidity with which the Rogue River Valley is being developed. In November of 1909, it was purchased by F. B. Waite, famous as the builder of the town of Sutherlin. March 12 of this year, Mr. Waite sold the land to M. C. Miller, and Mr. Miller in turn disposed of it to the present purchasers. The consideration paid by Mr. Miller to Mr. Waite has never been made public. Mr. Miller refused at this time to give it to the press.

M. C. Miller has proved to be one of the liveliest of the live wires in the valley, and in the short time that he has been in the Rogue River country he has made a record for big deals. In the past sixteen months he has made four deals in Southern Oregon land, the acreage of which aggregated more than 12,000 acres. The combined sale price of these four sales amounts to over \$1,000,000.

When asked as to his plans for the future, Mr. Miller smiled and stated that he was not prepared at this time to make a statement along those lines. — Medford Daily Sun.

S. E. Bartmess

UNDERTAKER AND
LICENSED EMBALMER

For Oregon and Washington

Furniture, Rugs, Carpets
and Building Material

Hood River, Oregon

W. F. LARAWAY

DOCTOR OF OPHTHALMOLOGY

EYES
TESTED



LENSES
GROUND

Over 30 Years' Experience

Telescopes, Field Glasses

Magnifiers to examine scale

Hood River
Oregon

and

Glenwood
Iowa

Land Plaster, the Great Soil Stimulator

Strengthens and invigorates all soils. You cannot afford to be without it

OREGON LIME & PLASTER COMPANY

Mill: Lime, Baker County, Oregon. Office: Worcester Bldg., Portland, Oregon

Growers Attention

All Orchardists who have the

Fresno or Bolton Orchard Heater

Will be supplied with our new attachment for our heater at cost. This new attachment is patented and will make the heater burn over seven hours on one gallon of oil and gathers all the soot.

ALL OTHER HEATERS ADVERTISED FROM COLORADO WITH SLIDING COVERS OR CENTER DRAFT FEEDS ARE A COPY OF OUR HEATER. IT WAS OUR HEATER THAT FIRST SAVED THE CROPS IN COLORADO AND WE DEFY ANYONE TO SAY DIFFERENT. TO CONVINCE THE GROWERS THAT OUR HEATER IS THE BEST AND THE CHEAPEST, WE WILL DEMONSTRATE OUR HEATER IN COMPETITION WITH ANY HEATER ON THE MARKET. They must demonstrate with us with at least 300 heaters.

Our heaters are guaranteed for five years, and all seams in the construction of our heaters are filled with a molder's cement, which insures them against leakage. Heaters with center draft are not practicable, and the center arrangement will break off very easily. Drafts of air coming from the bottom of a heater are not practicable—you must get the air drafts from the sides, and this we do.

We experimented with twenty different sized heaters before we perfected the present size, and we find this perfect; a large, roaring fire will do damage, and allow the cold air to rush in and the frost does damage. YOU MUST HAVE 100 HEATERS to the acre, and the smaller the fire the better. THE CALIFORNIA FRUIT GROWERS' EXCHANGE OF LOS ANGELES would never have adopted and endorsed our heater if they did not think it the very best heater on the market. THEY INVESTIGATED ALL OTHER MAKES.

BOLTON ELECTRIC ANNOUNCING THERMOMETERS RING A BELL
IN YOUR HOUSE AND WARN YOU OF THE APPROACH OF FROST

The Price of Our Heater is 20 Cents Delivered to You Complete
Thermometer Complete \$22.50

The Frost Prevention Co.

Incorporated

Balboa Building

San Francisco, California

WE ARE THE LARGEST MANUFACTURERS OF ORCHARD HEATERS IN THE WORLD

WILL REPEAT SPOKANE APPLE SHOW IN CHICAGO

BY AUGUST WOLF

THIRTY-FIVE commercial orchard districts in Washington, Oregon, Idaho, Montana and the Province of British Columbia, where

apple culture has reached the highest point of perfection, will be represented by their choicest fruit at an exposition under the management of the National

Apple Show, Inc., in the First Regiment Armory, Chicago, November 28 to December 4. Among the displays, housed in prettily decorated booths, will be a half dozen carloads, including the winner of the sweepstake of \$1,000 and the world's championship, also prize exhibits in other classes in competitions for premiums of a total value of \$20,000, offered at the third annual show in Spokane, November 14 to 19.

The primary purpose of the Chicago exposition is to give the people of the Middle Western states a more intimate acquaintance with intensive cultivation as practiced in the Northwest, also to show the highly successful and profitable results of scientific orcharding on irrigated and sub-irrigated lands, and the proper methods of packing apples for the market. Some of the exhibits will be accompanied by men and women who own and cultivate the orchards in which the products were grown.

Horticultural associations, boards of county commissioners and growers in all parts of the Western country are co-operating with the management of the National Apple Show, headed this year by Howard Elliott, president of the Northern Pacific Railway Company, in an effort to make the two shows the best of their kind in the history of fruit expositions. They realize the fact that the exhibitions are not money-making enterprises, but are educational in purpose and designed to be of benefit to the Northwest and the country as a whole.

Naturally, the orchardists and farmers in the Northwest are proud of what they have accomplished upon the former sagebrush wastes and in the foothills and the valleys, where only a few years ago coyotes and other wild things were the sole inhabitants. They have taken a prominent part in the settlement, growth and development of many agricultural districts in the Northwest, more especially that vast expanse west of the Rocky Mountains, where irrigation and other modern methods of tillage has worked such remarkable transformations, and they now bid others to share in their prosperity. Over-production of fruit and other foodstuffs is not feared, nor will

RICHARDSON Orchard Heater

Burns Perfectly crude oil, fuel oil, distillate oil or heavy residuum.

Never Fails to Burn during high winds or snow storms.

Economical Consumption of Oil, regulated according to the temperature to be controlled. Simple and effective.

The Hot Burner keeps up a continuous combustion as the oil drops, and with the oxygen of the air rushing to the burner, consumes everything and makes the greatest amount of heat and smoke possible.

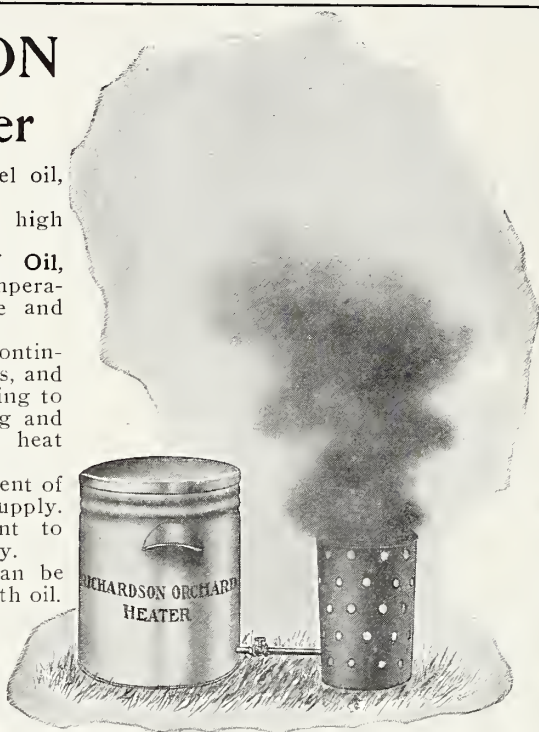
Large Oil Reservoir, independent of burner, will give a season's oil supply. Always ready. Very important to have each Heater ready for duty.

Emergency—Coal or wood can be burned alone or in connection with oil.

(Patent pending)

Geo. C. Richardson

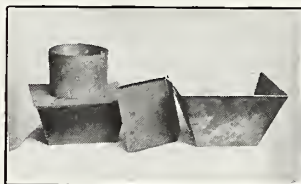
1200 East Eleventh Street
KANSAS CITY, MISSOURI



Buy Your Orchard Heaters Now

Everybody will want orchard heaters next spring; it has been demonstrated that orchard heating is profitable, and while heaters may not be needed next spring, it is well to be prepared for any emergency.

The National Orchard Heaters have been tested and have made good. Our sales are very great among those who have seen the heaters in operation. We know we will be swamped with orders in late winter and early spring, and therefore make special inducements for you to order now. Write us at once about your orchard, and we will tell you how many heaters you will need and the cost of same. Don't wait until you need the heaters—it will be too late then. Write now, and save money by ordering early.



National Orchard Heater Co., Grand Junction, Colorado

THE HEATER THAT MAKES GRAND VALLEY FAMOUS

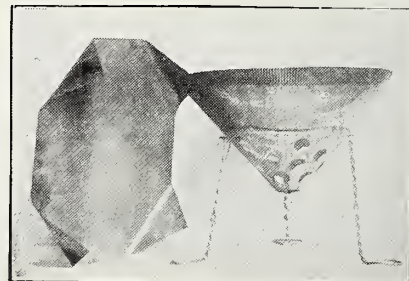
Millions of dollars worth of fruit has been saved by Ideal Coal Heaters. Big crops were saved when the temperature fell as low as 16 above zero in blooming time. Sixty-five thousand Ideal Coal Heaters were used in Grand Valley alone. Many thousands are sold for spring delivery. Our Jumbo Ideal burns all night without refilling. Ideals are reservoir coal heaters, self-feeding and self-cleaning. You pay for Ideals no matter what heater you use. If you use none you pay for Ideals many times. Better use them. We have sold many of our old customers heaters this year.

QUICK HEAT GREAT VOLUME
GREAT OUTWARD RADIATION BIG CROPS SAVED
VERY SMALL EXPENSE

Send 50 cents for sample. Reliable agents wanted. Write today.

The Ideal Orchard Heater Co.

Grand Junction, Colorado



When You Think Orchard Heaters Think The Troutman



The Northwest leads in "fruit" growing; will it in "fruit" protection? Frost has been the orchardist's worst foe, and now that it is conquered every commercial orchard should be equipped to carry on the fight. You cannot prepare at the last minute. **YOU MUST BE READY IN ADVANCE.** The present outlook points to a greater sale than ever before.

The factories cannot keep up with the demand if the orders come in at the eleventh hour, and we urge our patrons to place their orders **NOW** for delivery at their option.

The Troutman Orchard Heaters have been endorsed by the highest authorities.

The center draft combustion makes them superior to all others. They are manufactured in several sizes and are suitable for use under all conditions.

The more perfect combustion of the Troutman Heaters makes them the cheapest heater on the market to operate. No one knowing anything about the consumption of fuel can contradict our statements, or deny our claims of greater efficiency.

Many heaters will save your crops, but the Troutman will cost you just 50 per cent less to operate than any other device. Let us prove this to you and then place your orders promptly.

Send for our year-book, price list, and government bulletin on this subject.

The Round Crest Orchard Heater Co. Canon City, Colorado

there ever be the menace of crowded communities—there is room for half the nation.

As a forerunner of the Chicago exposition is the show in Spokane, where not less than 2,000,000 apples of standard varieties and sizes, the flower of the commercial orchards of America, will be spread out on expansive slopes and in decorated booths under the largest tent ever erected on this continent. The area required to house the exhibits equals three and a half acres of floor space. The various contests, ranging from a full carload of 210 barrels, or 630 boxes, to single plates of five apples, are free and open to the world. R. H. Rice, secretary and manager of the show, announces there will be more than 1,400 entries,

including twenty in the carload classes, thus making it the largest display of apples ever gathered together for exhibition purposes in the history of the world. In addition there will be demonstrations of orchard machinery, concerts by two bands and high-class vaudeville features.

Chief interest is centered in the sweepstake event on carloads. The winner will receive a purse of \$1,000 and a gold medal banner, emblematic of the championship of the world. The second prize is \$300 and a silver medal banner. There will also be carload contests with cash prizes of \$250 to firsts and \$100 to seconds on these varieties: Winesap, Rome Beauty, Wagener, McIntosh Red, Jonathan, Spitzenberg, Yellow Newtown and

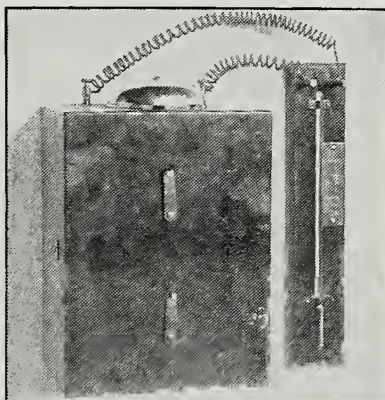
The Cederborg Frost Alarm

Will wake you up in time

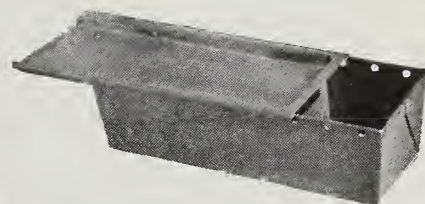
It can't fail, it rings if out of order. Send your name now to get information about Frost Alarms, Green House Alarms, Tested Thermometers for Orchard Use, Etc.

The Cederborg Engineering Co.

808 Twentieth Street, Denver, Colorado



The Hamilton Reservoir Orchard Heater



Acknowledged and proven, after three years' most successful use, the **standard of efficiency** and the **KING** of all heaters.

Millions of dollars' worth of fruit saved from spring frosts by its use.

Most wonderful invention of the age, and the fruit grower and vegetable producer reap the benefits.

The "Draw the cover and regulate the fire" principle has won, and we offer you the very best your money can buy, with absolute protection to your crops. A quarter of a million heaters in the hands of inexperienced growers last spring has proven every claim we have made. Get in line with other progressive growers and protect your crops from frost. Write us today for full information and for the story of "Frost Fighting," which will interest you.

The Hamilton Reservoir Orchard Heater Co.

Grand Junction, Colorado

A Trip to the Coast

Is incomplete without a ride
on the

Mt. Hood Railroad

By mountain streams, virgin forests,
apple orchards and snow
capped peaks

**Connects with O. R. & N.
at Hood River, Oregon**

CAPITAL STOCK \$100,000 SURPLUS \$20,000

FIRST NATIONAL BANK

HOOD RIVER, OREGON

F. S. STANLEY, *President*
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ESPECIAL ATTENTION AND CARE
GIVEN TO BUSINESS DEALS
FOR NON-RESIDENT CUSTOMERS

Assets over \$500,000

Savings Bank in connection

Send us your

White Salmon Valley Business

White Salmon Valley Bank

Under state examination

White Salmon, Washington

a mixed carload. Any standard winter varieties may be entered in the last-named with a minimum of fifty boxes to each. All entries are eligible for the sweepstake, and the Chicago Association of Commerce silver trophy cup will be awarded to the carload scoring highest on pack.

There will be fifteen competitions on ten-box entries, fifteen on five-box displays, two on general district displays from irrigated and non-irrigated lands, one on the most artistic display, limited to two pyramids of at least fifty apples each, two boxes, two baskets, two jars and two plates each; one foreign country and four state group displays, one four-box and thirty single box displays. Six hundred cash prizes will be awarded on plate exhibits. Substantial prizes have been provided for collections of fifty largest apples, displays of home-made by-products, apple pies, new varieties of apples, improved orchard appliances, best keepers, photographs of apples and the best boxes of apples saved from frost by orchard heaters.

The board of judges is composed of men of recognized ability and wide experience, headed by Professor H. E. Van Deman, of Washington, D. C., who has been engaged in exposition work in various parts of the country since 1884. He will be assisted by J. W. Murphy, of Glenwood, Iowa, an experienced horticulturist and authority on apples; C. J. Sinsel, of Boise, Idaho, for twenty-one years a resident of the Northwest, since which time he has been identified with the industry; Professor S. A. Beach, of Ames, Iowa, chairman of the board of judges at the 1908 show, and J. Gibb, of Kelowna, British Columbia, a practical and international exhibitor.

J. M. Schmeltzer, Secretary

Hood River Abstract Company

Hood River, Oregon

**ABSTRACTS INSURANCE
CONVEYANCING**

LADD & TILTON BANK

Established 1859

Oldest bank on the Pacific Coast

PORTLAND, OREGON

Capital fully paid

\$1,000,000

Surplus and undivided profits

\$600,000

W. M. Ladd, *President*
Edward Cookingham, *Vice President*
W. H. Dunkley, *Cashier*

Officers:

R. S. Howard, Jr., *Assistant Cashier*
J. W. Ladd, *Assistant Cashier*
Walter M. Cook, *Assistant Cashier*

INTEREST PAID ON TIME DEPOSITS AND SAVINGS ACCOUNTS

Accounts of banks, firms, corporations and individuals solicited. Travelers' checks for sale, and drafts issued available in all countries of Europe.

LESLIE BUTLER, *President*
F. McKERCHER, *Vice President*
TRUMAN BUTLER, *Cashier*

*Established 1900
Incorporated 1905*

Butler Banking Company

HOOD RIVER, OREGON

Capital Fully Paid, \$50,000

Surplus and Profits are \$45,000

INTEREST PAID ON TIME DEPOSITS

We Give Special Attention to Good Farm Loans

If you have money to loan we will find you good real estate security, or if you want to borrow we can place your application in good hands, and we make no charge for this service.

THE OLDEST BANK IN HOOD RIVER VALLEY

NEW RESIDENTS

We are always pleased to extend courteous assistance to new residents of Hood River and the Hood River Valley by advising them regarding any local conditions within our knowledge, and we afford every convenience for the transaction of their financial matters. New accounts are respectfully and cordially invited, and we guarantee satisfaction. Savings department in connection.

HOOD RIVER BANKING AND TRUST COMPANY

HOOD RIVER, OREGON

Ortho Lime-Sulphur Solution

For San Jose Scale, Apple and Pear Scab

Test 36° Beaume. Stronger than any lime-sulphur solution made in the United States. Guaranteed under the United States Insecticide Law of 1910

California Spray-Chemical Co., Watsonville, Cal.

Expert packers from districts in the Pacific, or box-apple group of states, will compete for the world's championship in a contest which should bring out the most skilled men and women in the country. The competition is open to the world. The first prize is a medallion watch charm and \$100 in gold, the second \$50 and the third \$25. Each contestant will be required to pack four boxes from a pile of six boxes of fruit placed on the entry's table. The scoring will be on speed, alignment, sizing, tightness and uniformity of pack. A. P. Bateham, of Mosier, Oregon, is chief judge. There will also be a contest for novices, open to those attending the free packing school during the week.

The apple packing school is the first of its kind in connection with an exposition. The ground floor of the state armory has been set aside for this department. Racks and tables will be available for fifty students. The school will be under the immediate charge of A. P. Bateham, chief judge of packs at the second National Apple Show, and J. M. Carroll, of Mosier, Oregon, a scientific apple packer of long experience. They will make the school of practical value by teaching the diagonal and square packs, and various methods of grading.

There will also be meetings of growers and exhibitors to discuss the proposed revision of quality ratings. It will be a fitting occasion to take action, requesting the American Pomological

Society, called to meet at Tampa, Florida, next January, to revise its scoring list and give Western apples the valuations to which they are entitled.

The Country Life Commission of the State of Washington is also arranging for several sessions to take up the matter of the proposed community center and

consolidated rural school. The commission, headed by David Brown, of Spokane, appointed by Governor Hay last spring, will present its plan for discussion. Nation-wide interest has been aroused in this subject since the Roosevelt commission, of which Dr. Liberty Hyde Bailey, of Cornell University, was

Malthoid Roofing

The dependability of Malthoid Roofing has been proven by special tests covering a period of many years.

Malthoid will last as long as the building it covers. It is inexpensive, easy to lay, and your roof troubles are over when Malthoid is laid.

Made by THE PARAFFINE PAINT COMPANY

San Francisco and Everywhere

Stuart Hardware & Furniture Co., Agents, Hood River, Oregon

IT'S FREE

Send for it. A new and valuable book on

Cheerful Homes

This booklet is illustrated with pictures of the most beautiful bungalows of Southern California

water would be turned on within a few weeks, probably between May 15 and May 20.

The general use of smudge pots in the Grand Valley and Western Slope of Colorado saved practically 90 per cent of the crop in the state, and as many apples, peaches and pears will be shipped from the Centennial state this year as in 1909.

The Grand Valley will ship over 2,500 cars of fruit this season, as against a trifle less than 3,000 a year ago, but Montrose will show a great increase in output, and Delta County will also ship nearly a full crop.

Reports received from Utah by the Grand Junction Fruit Growers' Association indicate that the Mormon state will

ship probably 75 per cent as much fruit as a year ago. New Mexico also suffered heavily, and Eastern Colorado estimates a 50 per cent crop.

The growers who did save their crops are expecting to obtain fancy prices for their fruit this season because of the general freeze over the nation. Some growers anticipate the highest prices in years.

Buy and Try

White River Flour

Makes

Whiter, Lighter Bread



This trade mark insures your getting a standard spray. The leading fruit growers and fruit growers' associations of the Northwest use NIAGARA exclusively. Ask them the reason why, and then write for our booklet, "Successful Spraying," giving you more reasons why you should raise better, bigger apples. It doesn't say the last word on spraying—you are the one to say that—but it tries to tell you, in a simple way, why, how and when to spray, and to refer you to some of the leading authorities on this most important phase of horticulture.

Spraying with lime-sulphur solution has ceased to be an experiment with the orchardist, just as its manufacture has ceased to be an experiment with us. With scientific preparation and intelligent use, definite results are now certain.

The successful horticulturists are not only recommending its use two and three times for winter and spring spraying, but are enthusiastic over its use after the leaves fall in autumn to catch the naughty insects before they go into winter quarters. This makes it easier to get ahead of them in early spring.

We are prepared to make immediate shipments for fall spraying. See our premium offers for the "All Oregon Fruit Show," Nov. 30.

HOOD RIVER SPRAY MFG. CO.
309 FAILING BUILDING PORTLAND, OREGON



Do Not Buy Arsenate of Lead on Arsenic Contents Alone

As the name implies, Arsenate of Lead is a chemical combination of **Lead** and **Arsenic**, and the **Lead** has an important function in this combination.

It acts as a binder, holding the Arsenic on the foliage, destroying not only the insects on the foliage at the time the poison is applied, but those that put in their appearance later.

It forms a strong chemical union with Arsenic, reducing to the minimum soluble arsenic, which causes foliage injury. When used according to directions it will not injure the most delicate foliage.

GRASSELLI ARSENATE OF LEAD PASTE contains 15 per cent Arsenic Oxide, enough poison to kill, and about 40 per cent Lead Oxide, the maximum amount consistent with good mixing properties.

It complies in all respects with the most rigid requirements of federal and state laws governing the manufacture and sale of Insecticides.

Grasselli Arsenate of Lead

- Kills all Leaf Eating Insects
- Sticks to the Foliage
- Does not Injure the Foliage
- Mixes readily with Water

DISTRIBUTERS IN THE NORTHWEST:

- Wenatchee Produce Co., Wenatchee, Washington
- Inland Seed Co., Spokane, Washington
- Hardie Manufacturing Co., Portland, Oregon
- Samuel Loney & Co., Walla Walla, Washington
- Missoula Drug Co., Missoula, Montana
- Western Hardware & Implement Co., Lewiston, Idaho
- Hood River Apple Growers' Union, Hood River, Oregon
- And in all consuming districts

WRITE THE ABOVE, OR OUR ST. PAUL OFFICE FOR NEAREST DISTRIBUTER

The Grasselli Chemical Co.

Established 1839
Main Office, Cleveland, Ohio

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**Increase your profits
Insure the safety of your investment**

The first cost of a fruit tree is an insignificant item, but the quality and pedigree of that tree is a powerful, perpetual factor of your income.

You cannot afford to plant anything but the best, the most carefully propagated trees of KNOWN ancestry—in other words, a strictly THOROUGHbred tree. Heredity is as surely transmitted by trees and plants as it is in animals. The good or bad characteristics of a tree are as surely transmitted to its offspring as in the higher forms of life. A vigorous, prolific, regular-bearing and disease-resistant tree will produce young trees of the same characteristics.

An orchard of this character is the best real estate agent you ever had when you wish to sell—the best guarantee of your income while you live—and the safest endowment you can bequeath to your widow or children. MR. ORCHARDIST, WOULD YOU TRY TO ECONOMIZE A FEW CENTS ON THE COST OF SUCH TREES?

The Hood River Valley is one of the most noted apple-producing sections of the world. Orchards have netted as high as \$1,800.00 an acre from a single crop of apples. From the highest earning trees of the best orchards of this valley, trees whose ancestry can be traced back generation after generation of high production and vigorous, sturdy qualities, are all of the stock of the HOOD RIVER STANDARD NURSERY COMPANY grown. They are THOROUGHbred, PEDIGREED apple trees.

For the season of 1910 we can offer a limited amount of extra size, apple only. Write for our guarantee and price list.

HOOD RIVER STANDARD NURSERY CO.

HOOD RIVER, OREGON

GRIMES GOLDEN A FAVORITE APPLE IN EUROPE

H. B. MILLER, AMERICAN CONSUL AT BELFAST, IRELAND, TO W. K. NEWELL, GASTON, OREGON

HAVING made further investigations in relation to the apple market, have now in preparation a rather lengthy report on the apple and pear markets of Europe, which I will forward to you, and probably the "Oregonian" for publication in the course of a few days. One thing I have discovered that I am sure will please you very much: In the highest-class apple trade here Grimes Golden is choice, even above the finest Yellow Newtowns. I am advised by the dealers in the very highest grade of apples that the flavor

and quality of this fruit suits the tastes of the market better than anything else; Yellow Newtowns coming next. You are the Grimes Golden expert as I remember, and undoubtedly are well acquainted with the nature and character of the tree and fruit as produced in the Willamette Valley. I should like very much if you will advise me concerning your experience with this fruit. Is the tree a hardy one and a thrifty grower, or is it delicate and easily injured by canker and so forth? Does the fruit grow to a good size, and is the tree a

regular bearer? What time of the year do you pick them, and what are their keeping qualities in the Willamette Valley? If they are as good as I remember your recommendations of them to be, it would be wise to extend the planting of them in the Willamette Valley, especially for this trade. Another interesting feature of my examination is that the Rogue River Yellow Newtowns, this year, are counted superior to the Hood River Yellow Newtowns, and are out-selling the Hood River product. There are some very fine looking apples in this market from the State of Washington, very fancy looking Rome Beauties, Wine-saps, Black Twig, and several other red varieties. All of those received from the first of the year have been unsatisfactory as they have turned black, and a very large per cent have decayed, and the dealers are very much discouraged with this Washington fruit. I could not find out definitely just where the Washington fruit came from, but am of the impression it was Yakima. The men handling the fruit here have absolutely no knowledge of the location or conditions under which the fruit is grown, and these examinations which I have made have been without any knowledge on their part as to the probable causes of deterioration. It occurs to me that the defect in the Hood River, as well as the Washington fruit is due to irrigation. Evidently the irrigated fruit will not hold



The Best Tree Protector

Made of Yucca Palm. A perfect protection against rabbits, grasshoppers, heat of the sun, borers and frost, and keeps the tender bark of the young trees moist and healthy. Prevents sun scald.

Quicker to put on than any other protection; no strings to tie; is open grained and allows free circulation of air. Can be taken off to spray the trees, and is not affected by rain.

PRICE \$1.50 PER HUNDRED

A. Whitehead Hood River, Oregon

out and be fit for market after the first of the year. I am beginning to have the opinion that for the late markets coming after the first of the year, no irrigated apples will suit. If this proves to be the case, there will undoubtedly be a great boom in the Willamette Valley apple lands, where high-class fruit can be produced without irrigation. This is a matter of tremendous importance to all Willamette Valley fruit interests, and should be examined into in a most thorough way. There has not been the slightest prejudice on my part in making these investigations in this market, and what I have stated to you is the plain truth from most reliable sources.

Concerning the pear market, I have more encouragement every time I go into the commission houses and talk pears with the dealers. What is especially needed is a fair-sized, good pear that will hold up well for the holiday season, coming into this market between the 15th of December and the 15th of January. The pear need not be so fancy in quality. It should be of moderately good quality, and firm enough to stand up well during this season. The great difficulty experienced here with all the pears is to get them firm enough to last through the holiday season. The French pears, ones that our fruit would have to compete with, do not meet these requirements. In fact, all of the pears that reach this market from any part of the world are uncertain in regard to decay and firmness at the holiday season. If you can select a pear that will produce well, and meet these requirements, you will have the finest fruit business on the Pacific Coast.

I received a long letter from our mutual friend, Lowsdale, on the sub-

ject of pears, and he seems to be of the opinion that all of the good pears cannot be grown successfully in the Willamette Valley on account of what is called pear blight, which he attributes to winter freezing. I am inclined to accept this view, with the exception of pears on the high hills. The cherry trees on the Sheridan Hills are so free from gummosis and frost injury that I am inclined to the opinion that the pear will be equally free, and that the hills 500 feet above the valley will produce pear trees that are likely to escape this injury. What do you know about this matter, and what are your observations? Lowsdale says that the pear trees on his place have all been ruined by this freezing blight. What is the elevation of his apples? Won't you kindly give me the benefit of your information and observations along this line? It is my desire to plant, as I suggested to you, ten acres more of apples and ten acres of pears on my Sheridan farm. I am inclined now, if your report is good on the Grimes Golden, to plant them instead of the Yellow Newtowns. I do not like the idea of grafting trees after they have become four or five years old. Another objection to

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The Most Productive The Most Delicious
The King of all Strawberries

Plants for Sale Now

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For reliable information and accurate descriptions of the best varieties for commercial or home use, see our new

AUTUMN CATALOG

IN which we list the largest, most complete assortment yet offered, of Fruit, Shade and Ornamental Trees, Shrubs, Berries, Climbing Vines, Roses, Flowering Bulbs and Roots, Ferns, Geraniums, Palms, Perennial and Bedding Plants together with much interesting and valuable information on the culture and selection of varieties. Ask for Catalog No. 201. A postcard will bring you a copy free.

Portland Seed Co.
Portland : : : Oregon



32-Page Strawberry Booklet FREE

WRITE FOR FALL LIST—ISSUED OCTOBER 1st



THE SILVA-BERGTHOLDT COMPANY
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GALBRAITH "NEW LAND" FRUIT TREES **FREE FROM DISEASE GROW FASTER**

Nebraska trees thrive best everywhere—famous for heavy fruiting. Yearling apples 9c. Cat-alpa Speciosa, \$2.00 per 1000. Varieties for Northwest. We sell direct—no agents—save you one-half and pay freight. We comply with all requirements for interstate shipments. Complete Catalogue free.

GALBRAITH NURSERY CO., Box 47, FAIRBURY, NEB.

True-to-Name Nursery

Offers for fall 1910 a complete line of nursery stock, including all the leading commercial varieties adapted to the Northwest. Our trees are all grown on the best whole roots and all buds and scions used are selected from bearing and tested trees, which insures not only early bearing, but trees true to name.

Write us for prices before placing your order. We give a one-year subscription to this paper with every order of \$25.00 or more. Address

TRUE-TO-NAME NURSERY

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Capital paid up, \$100,000

WE HAVE NO AGENTS
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GET our prices and save money. Trees first-class. We lead, others follow. Have several hundred thousand finest peach trees ever grown in the West. Cherry, pear and apple in numbers that foot up millions. If planted in a line would make over three rows, the usual distance of planting, from Seattle to New York city.

WRITE US AND MENTION
THIS PAPER

Main Office
SUNNYSIDE, WASHINGTON.

Harvest is Over

and it is time to place your order for such nursery stock as you will need next season.

The demand is great this year, greater than last, and you should place your order early in order to insure its being filled.

A great many waited last year until the eleventh hour before ordering, and got left. Are you going to do likewise?

Our stock is looking exceptionally well at this date and you can rely on your order being filled with stock that will not only satisfy you, but please you.

Fill out the coupon below and mail TODAY. It will place you under no obligation to buy.

**Yakima Valley Nursery
Company**

Toppenish, Washington
MORE SALESMEN WANTED

Yakima Valley Nursery Company,
Toppenish, Washington.

Dear Sirs: Please send me your catalog and price list of your highest quality nursery stock. I will be planting about..... trees. It is understood this does not obligate me to buy.

Name

P. O.

State.....

the Yellow Newtowns is that it takes it so long to come into bearing. What is the length of time for the Grimes Golden?

I am becoming more enthusiastic than ever in the idea of making Portland the center of the greatest apple growing and shipping point in the world as soon as the Panama Canal is opened.

There ought to be at once a well-organized method of gathering information concerning the markets of the world for pears and apples, and a study of the conditions of production in the Willamette Valley to meet this world's markets. The planting that is now going on so successfully should not be allowed to run at haphazard, but should be directed with intelligent understanding of the conditions, so that waste may be avoided, and that proper preparation for the great markets be made. Cannot you find some way to organize a special lot of interested men to do this work?

ORLANDO HARRISON, just returned from an European trip, says: "Europe is far behind America in commercial fruit growing. The fruit growers of the United States and Canada, who will grow and pack only good fruit, have a great future for the output of their fruit through the export trade. It would now take many years for the Europeans to grow enough fruit to supply their people. I doubt if it will ever be done. They want our fruits in England. The nurseries and farms are well cultivated, but the orchards as far as I have seen have been poor—but little cultivation and little spraying. Trees are headed too high; consequently poor fruit. The only good fruit I found in England was grown under glass, especially peaches. They have a promising crop of winter apples, but only a small quantity of trees. In France I found the peaches and apples very poor, with some good specimens of pears growing and maturing well. The peaches grown outside of glass are not to be compared with our peaches in quality. The price of fruits is out of reason and that decreased the sales. In Switzerland I found more pears of good quality, and there the apples and peaches are poor. The price of fruits is not quite so high in Switzerland as in England, France or Germany."—The Farm Journal.

NURSERY SALESMEN

Drop us a line for information regarding our splendid proposition.
Big commissions paid weekly.

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SALEM, OREGON

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420 Acres Devoted to Nursery Purposes

THE WOODBURN NURSERIES

Established 1863 by J. H. Settlemier

**Grower of Choice
Nursery Stock**

F. W. SETTLEMIER
Woodburn, Oregon

RICHLAND NURSERY

Richland, Washington

FRUIT TREES

Complete stock of leading varieties of
Apples, Pears, etc.

WRITE US FOR PRICE LIST

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

TREES in Quantity, Price and Quality

Growers and importers of a full line of all nursery stocks—apples, pears, prunes, cherries, peaches, etc. Large or small orders—we fill all. Just drop us a few lines giving your list of wants, and receive offers which we know will interest you. Have always given satisfaction and can do so now.

We want to get in touch with planters.

CARLTON NURSERY CO.
Carlton, Oregon

PORTLAND WHOLESALE NURSERY COMPANY

Rooms 1 and 2 Lambert-Sargeant Building
Corner East Alder Street and Grand Avenue
PORTLAND, OREGON

Lafayette Nursery Co.

Growers of Standard Sorts and
Commercial Varieties

APPLE, PEAR, PEACH, CHERRY, ETC.

*Remember, the Root System
is one of the most important factors.
Ours are unsurpassed.*

Regardless of your wants, you cannot afford to place your order until you hear from us. Write today.

Address: LAFAYETTE, OREGON
Mention "Better Fruit"

Good Trees

When you want a first-class article in any line of merchandise, you patronize a dealer who makes it his business to handle a good article.

You prefer to deal with a merchant who handles staple lines of dependable merchandise, rather than with one who carries a few of the articles in question as a side line.

There is far more reason for using similar care in buying your trees.

Our business is the nursery business. That's all we do from one year's end to the next. We try to grow good, dependable stock, sell it at a fair price through dependable salesmen, and deliver it in good condition. We are in business twelve months in the year, and expect to remain in business for an indefinite time. That's worth considering.

Write us your wants.

Washington Nursery Co.
Toppenish, Washington

Agents everywhere More wanted

500,000 Clark Seedling
Strawberry Plants

Fall or Spring Delivery

WRITE

Ideal Fruit and Nursery Company

HOOD RIVER, OREGON

Hood River Nurseries

Have for the coming season a very complete line of

NURSERY STOCK

Newtown and Spitzenberg propagated from selected bearing trees. Make no mistake, but start your orchard right. Plant generation trees. Hood River (Clark Seedling) strawberry plants in quantities to suit. Send for prices.

RAWSON & STANTON, Hood River, Oregon

You Want the Best?
WE HAVE IT IN
TREES

They have the highest possible developed root system. It's the root which counts

Mr. Buyer:

No matter what quantity you may require, let us figure with you on your wants for this season, or send for our price list, and if you entrust your order with us we feel certain of retaining you as a permanent customer.

You will get what you order

Yakima and Columbia
River Nursery Co.

North Yakima, Washington

Growers of
Selected Yakima Valley Fruit and Ornamental Nursery Stock

"NONE BETTER"

Salesmen — A few wanted. Write for terms

COMMUNICATIONS OF INTEREST TO FRUIT GROWERS

Spokane, Washington, September 12, 1910.
H. Woods Company, Chicago, Illinois.
Gentlemen: I have your telegram of September 10, and will expect your cup in a day or two from the express company.
We cannot express too strongly our thanks for your generous action in this matter. We are confident that our Pacific Northwest growers will be as

appreciative of your public spirit as we are, because it means much to them to have prize cups offered under these conditions. The National Apple Show, of course, appeals to our growers and we give liberal cash prizes, but when a concern like your own offers such a handsome prize as an additional encouragement to the orchardists, it makes us feel that both the show and its exhibitors have strong friends who appreciate the efforts being made to secure perfection in fruit and enlarge the market.
We are glad to note you had photographs taken and it will be a great pleasure to us to use some of them in newspaper illustrations in this country.
We, of course, knew that if you gave a cup you would give something nice, but we were not prepared for anything of the value of this magnificent trophy.
Thanking you again and expressing the hope that your prosperous trade relations with Northwest growers will continue, and we shall look forward with more pleasure in meeting you personally in Chicago.
Yours very truly,
National Apple Show.
By Ren H. Rice, Secretary.

Portland, Oregon, October 6, 1910.
To the Readers of Better Fruit:

Niagara Lime-Sulphur Spray continues to increase in popularity. In fact, we were unable to supply the demand last season.

Perhaps you already know this—have used Niagara—and know the wonderful results after even one application. If you have not, we believe you will be amply repaid in better, bigger apples if you will look into the matter.

Why not get your neighbor orchardist to tell you his experience in the use of our Niagara brand of lime-sulphur solution, or better still, ask us to send you our booklet—"Successful Spraying." It will tell you in a simple way, why, how and when to spray with the Niagara Lime-Sulphur spray.

Of course, if you have used our Niagara spray, you will want to use it again, and in order not to have the disappointment of last season in not getting your spray on time, won't you send in your order now, telling us, or your nearest dealer, when you want it shipped? This will accommodate us immensely and enable us to get your spray to you the very day you want to use it.

We like to send out fresh spray, but we can't do this if we have to start our factory running early for fear everybody will put off ordering until the very last minute, and find us unable to supply the "late comers."

We are anxious to make next season's spraying

contribute to the cleanest apple crop the Northwest has ever grown. You can help by ordering Niagara Lime-Sulphur Spray now. Very truly yours,
Hood River Spray Manufacturing Company,
Jas. R. Forden, Manager

Spokane, Washington, September 29, 1910.
A. C. Rulofson Company, San Francisco.

Gentlemen: We have been much interested in the "Rulofson" Apple Cartons which are now being endorsed for the packing of apples in different size packages containing from one apple to one-half bushel.

No doubt opinions would vary somewhat, which, after all, is not to be wondered at, for there are some growers who would reject anything but bright, clean-cut boxes, and who select every apple and have them uniform and as good on the bottom of the box as they are on the top layer, while others will shovel them into dirty, weather-beaten old boxes that they have picked up in somebody's back yard while peddling their apples around town.

There are other shippers who will consider the "Rulofson" box superfluous, impractical and an unnecessary expense, while others will see at once the benefit that these packages will be to them in placing their choice fruit before a discriminating buyer to its best advantage. It is needless to say that these latter men will get by far the best net results from their crops.

We believe it will be simply a matter of finding discriminating buyers and perhaps doing some preliminary educational work to make the introduction of this box highly successful. Yours truly,

J. C. B.

SEND NOW
for samples of our "Diamond
Quality" RE-CLEANED
Farm and Field Seeds,
Grasses, Clovers, Vetches,
Alfalfa and Grains for
FALL SOWING

We have Special Mixtures for
Special Purposes—

Dry Land Pasture Mixture, Wet
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Cover Crops for Orchards.

Tell us the nature of your soil and your
local conditions. Over 20 years' experi-
ence right here
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Northwest qual-
ifies us to advise
you.

Ask for Catalog No. 200



PORTLAND SEED CO.
PORTLAND, OREGON

THE NEW WEST

Is full of surprises. It is no longer the land of cowboys, coyotes, blanket Indians. Instead of illimitable sagebrush desert, one finds fruit laden orchards, heavy headed grain, green meadows and alfalfa fields. It's the best of God's out-of-doors country—clear skies, pure air, snow clad mountains, waterfalls, odoriferous pine woods. Read all about it in The Pacific Monthly, magazine of the West.

The Pacific Monthly Company,
Portland, Oregon.

I am interested in The New West. Send three recent numbers of your magazine, for which I enclose 25 cents.

Name-----

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KELLY'S TREES ARE TRUE TO NAME

2,000,000 TREES 2,000,000

For fall and spring planting. 350,000 Winesap, 350,000 Jonathan, 200,000 Rome Beauty, 100,000 Delicious and all other leading varieties in Peach, Pear, Plum and Cherry

Before Placing Your Order Write to

Tim Kelly, Proprietor Wapato Nursery, Box 197, Wapato, Washington

FRUIT GROWERS, YOUR ATTENTION!

Royal Anne, Bing and Lambert cherry trees; Spitzenberg and Newtown apple trees; Bartlett, Anjou and Comice pears, and other varieties of fruit trees.

A. HOLADAY

MONTE VISTA NURSERY
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EMMETT NURSERY

THE LARGEST NURSERY PLANT IN IDAHO

OUR SPECIALTIES

PEACHES—CHERRIES—DWARF PEARS

A fine stock of all standard varieties of Apples, Fruit and Ornamental Trees, suited for the Northwest.

CHARLES P. HARTLEY, Proprietor

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Winfield Nursery, Winfield, Kansas

GROW TREES OF QUALITY

Their new work, Progressive Horticulture, fully illustrated, describes trees of quality in the making

RUSSELLVILLE NURSERY COMPANY

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Montavilla, Oregon

A progressive and up-to-date nursery. A full line of fruit and ornamental trees. Growers of fine nursery stock. Varieties of special merit. Careful and reliable attention given to filling every order with first-class trees and plants. Satisfaction guaranteed. Nursery at Russellville, suburb of Portland. Take Montavilla car. Nursery one mile east of terminus.

BUY YOUR FRUIT TREES FROM

NURSERY STOCK

THE CASHMERE NURSERIES

We have a full stock Jonathan, Winesap, Rome Beauty, Delicious and other leading commercial varieties.

PEAR, PEACH AND CHERRY TREES

Small Fruits, Shrubbery, Roses and Shade Trees.

G. A. LOUDENBACK, Proprietor

Write for Catalogue and Price List.

CASHMERE, WASHINGTON

Montana Fruit Growers

AND OTHERS OF HIGH ALTITUDE

WE are now ready to book your orders for fall and spring delivery of McIntosh Red and Wageners. For Northwest fruit growers in general, a full stock of all standard varieties—Spitzenbergs, Jonathans, Winesaps, Rome Beauties, etc., and all other kinds of fruit trees and shrubbery.

THIRTY-ONE YEARS IN BUSINESS

Milton Nursery Company

A. Miller & Sons, Incorporated

Milton, Oregon

WHEN WRITING ADVERTISERS MENTION BETTER FRUIT

Anderson, Missouri, October 17, 1910.

Editor Better Fruit:

I heard a new and original complaint against spraying the other day. A neighbor of mine has forty acres of unsprayed trees and he produced a good-sized crop of wormy, gnarled and scabby apples this season. He was talking to a friend, who remarked upon the fact that his apples had made a poor showing.

"Well, what else could you expect," he complained, "when all of my neighbors are using spraying machines and driving the bugs over into my orchard."

Very truly,
Subscriber.

[This little yarn is absolutely true.—Editor.]

Bartlett and Anjou

We still have a few thousand one-year Bartlett and Anjou to offer, in both standard and dwarf

Address, W. M. Grisinger,
Mgr. Orchardists' Supply Co.

Box 543

Salt Lake City, Utah

Telegraph Address, Kenyon Hotel

November 1, 1910

Do Not Delay

Your Fall Planting

OUR AUTUMN CATALOG ready in September
Mailed Free on Request



**BULBS
ROSES**

FRUIT, SHADE
AND ORNAMENTAL

TREES

**STRAWBERRY
PERENNIAL
& BEDDING PLANTS**

Our annual importations have arrived from FRANCE, HOLLAND, JAPAN and the AZORES and domestic stocks are now ready. Early orders secure select reservations.

ASK FOR CATALOG NO. 201

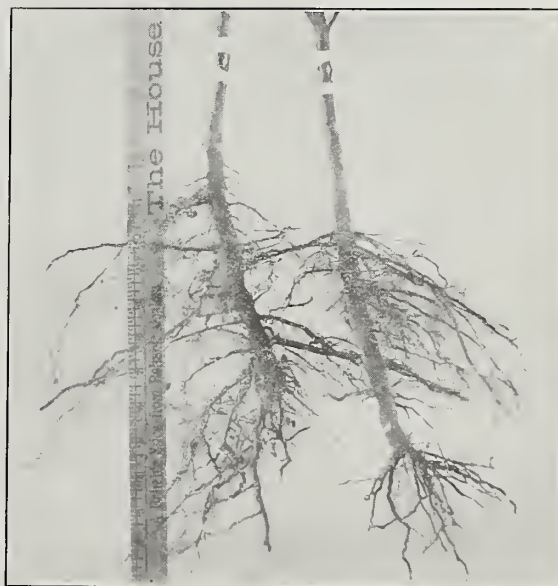
PORTLAND SEED CO.
PORTLAND, OREGON



THIS VIEW SHOWS OUR IRRIGATION SYSTEM, which as you observe is not so much **water power**, but **horse power**, with which we do constantly and systematically cultivate our young trees from early in the spring until midsummer, after which cultivation ceases, thus permitting the young wood to ripen, slowly but naturally, and we are able to deliver to you, Mr. Planter, the highest type of the ideal tree that can be produced. We also show a two-year-old seedling on which has been budded the desired marketable tree. This is the type of seedling on which our famous one-year trees are grown. There is no secret or mystery in the power that produces our high grade tree. It has the root system—the foundation. We have hundreds of orchards, the most prominent in the country, standing as living witnesses of the superiority of our trees.

Our facilities for handling your order
in all its aspects are the most complete
in the West, if not in the United States

We are supplying more customers with trees than any one nursery in the West. You will admit there must be a reason, and the only reason we know of is that our trees give satisfaction and bring results. Whether you are wanting only a dozen trees or 50,000, we can serve your needs, and at a price no greater, if as much, as you will pay elsewhere for trees not as good. Let us hear from you concerning your wants for **apples, pears, peaches, prunes, walnuts, shade trees, small fruits, etc., etc.**



TWO APPLE SEEDLINGS, DEMONSTRATING THE
FOUNDATION OF OUR TREES

Address

Oregon Nursery Company

Salesmen Wanted

Orengo, Oregon

A REPUTATION TO SUSTAIN

VINELAND NURSERIES COMPANY

PROPAGATORS OF

**RELIABLE NURSERY
STOCK**

All stock budded from bearing
Trees, Fruit and Ornamental

CLARKSTON, WASHINGTON

FEATURES OF THE WATSONVILLE APPLE ANNUAL

THE assistant editor of "Better Fruit" has just returned from a two weeks' trip to the apple sections of Northern California, taking in the Watsonville Annual Apple Show.

This show had exhibits from all the different apple sections of Northern California, Watsonville and Sebastopol being the heaviest contributors; there were also nice exhibits from Senora, Eldorado and Santa Cruz. In all, there were about 14,969 boxes of apples on exhibit, this being even larger than at last year's annual Apple Show at Spokane. Of these exhibits, five or six carloads scored from eighty-five points and above, some of them from seventy to eighty-five points, and a few as low as sixty-one points. Of course the latter should not have appeared in the show at all, but on the whole, the show was a very creditable one and the management deserves great praise for the splendid apple show it has just pulled off.

One of the things which struck Mr. Greisen's fancy was the feature exhibits, of which there were ten or twelve. The exhibit winning first prize was the Western Hemisphere, made out of apples, and the two oceans, Atlantic and Pacific, made out of dried apples on a blue background, in which the Panama Canal was depicted in the

form of two women's faces in the act of kissing each other. The second prize was for a steamboat entirely covered with green and dried apples, and with electric lights in the interior showing it to be loaded with apples. The description of this was, "First steamboat with Pacific Coast apples to go through the Panama Canal." The third prize was for an exact reproduction of the High School, the plans for this being drawn and the skeleton made entirely by High School students, boys and girls. Among the other exhibits that should be mentioned were the American flag, made out of apples, a Dutch windmill, a nice exhibit of Gravensteins from Sebastopol going into a mill and coming out at the other end in the form of twenty-dollar gold pieces dropping into a large sized savings bank.

These exhibits drew people from all over the country, and were really a treat to the eye, and took off the monotony of carloads and carloads of packed apples.

On the first day, the National Bankers' Association, returning from a meeting at Los Angeles, stopped their special train at Watsonville and looked over the show.

On Wednesday, San Francisco day, trainloads of people came from San Francisco and San Jose. On Thursday all business houses, saloons as well as churches, closed in Santa Cruz, and practically the whole city came to Watsonville, something like fifteen carloads of people. On Thursday evening an apple box-making contest took place, for which ten boys entered. Mr. Greisen was one of the judges of this contest. The boy winning the first prize made ninety-three boxes in one hour. Thirty-six points were scored for each box made; that is, so many per nail. Wherever two nails were used where there should only have been one, two points were deducted; for nails with points sticking out at the sides, two points were taken off. The young man, Mr. Poor, made ninety-three boxes and was announced to be the world's champion box nailer, and he will come to the Spokane Apple Show and defend the title against anyone who wishes to challenge him. The second prize was given to Mr. Cousins, who made eighty-seven boxes in one hour. Both these boys made almost perfect boxes, as any box made incorrectly or out of shape meant a certain number of points against the maker.

The apple box-making contest was under the auspices of J. C. Pearson Cement Coated Nail people, and the first prize was a gold watch, handsomely engraved; the second prize was also a gold watch. The J. C. Pearson people have also kindly offered, through Mr. Greisen, a first prize of a gold watch to be competed for at the Hood River Apple Show, which offer Mr. Greisen, on behalf of the committee, accepted and the watch will be forwarded in the near future.

On Friday evening a packing contest was held for fruit packers, five boxes to be packed within forty minutes, an allowance being made for the time gained before the expiration of the forty minutes, the bulging, uniformity, etc., of the pack being taken into account for the scoring. Mr. Greisen was also one of the judges in this contest.

Columbia and Okanogan Nursery Company

Wenatchee, Washington

PROPAGATORS AND GROWERS OF

The Cleanest, Thriftiest, Best Rooted Nursery Stock in the

WORLD

WHOLESALE AND RETAIL

SEND US YOUR ORDER

Supplying Large Commercial Orchards a Specialty

QUAKER NURSERIES

We have a large stock of YELLOW NEWTOWN PIPPINS, SPITZENBERGS, JONATHANS, WAGENERS, ROME BEAUTIES, and all of the leading varieties of apples.

We also carry a heavy line of BARTLETT, COMICE AND BEURRE D'ANJOU PEARS.

A general stock of peaches, such as EARLY CRAWFORDS, ELBERTAS, LATE CRAWFORDS, FOSTERS, TUSCAN CLINGS, PHILLIPS, MUIR, EARLY COLUMBIA, Etc.

Small fruits in great abundance, STRAWBERRIES, BLACKBERRIES, RASPBERRIES, DEWBERRIES, GOOSEBERRIES, CURRANTS, GRAPES.

H. B. PATTERSON, MEDFORD, OREGON,
Special Selling Agent for Southern Oregon.

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NURSERY CATALOG

New, handsome, instructive, up-to-date, describing

Fruit and Ornamental Trees, Shrubs, Vines, Roses, Berry Plants, etc.

Free on request. Write now, mentioning this paper.

J. B. PILKINGTON, Nurseryman, Portland, Oregon

Hood River Valley Nursery Company

Route No. 3, Box 227

HOOD RIVER, OREGON

Phone 325X

Will have for fall delivery a choice lot of one-year-old budded apple trees on three-year-old roots, the very best yearlings possible to grow. Standard varieties from best selected Hood River bearing trees—Spitzenbergs, Yellow Newtowns, Ortleys, Arkansas Blacks, Gravensteins, Baldwins and Jonathans. All trees guaranteed first-class and true to name. Start your orchards right with budded trees from our nursery, four miles southwest from Hood River Station.

WILLIAM ENSCHEDÉ, Nurseryman

H. S. BUTTERFIELD, President

SEEDS AND TREES THAT GROW

For 25 years we have supplied our customers in all States with Trees and Seeds that GROW. We carry a most complete line of Fruit and Ornamental Trees, Berry Bushes, Roses, Perennials, Bulbs, etc. Low prices. Best quality stock only. Pacific States varieties of Apples, best one year trees at \$6.00 per 100, Peaches, \$7.00 per 100. We pay freight on \$10.00 orders.

Also, very large and complete stock of Farm, Vegetable and Flower Seeds to select from. Strictly Upland-Grown Alfalfa Seed a Specialty. Write for big 112 page catalogue and Garden Book. Mailed FREE to anyone interested.

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GERMAN NURSERIES BEATRICE, NEB.

LILLY'S BEST SPRAY BOOK

This is the book every fruit grower and farmer needs. It is complete in every detail including an absolutely scientific Spray Calendar with diseases and insects illustrated and described.

HAND AND POWER Spray Machinery

Tested sprays and insecticides are all included together with prices, illustrations and full descriptions. Lilly's Spray Book is a practical guide. Send for it—free to those asking. Chas. H. Lilly Co., Seattle.



C. F. COOK, *President and Manager*F. H. COOK, *Treasurer*F. J. NEWMAN, *Secretary*

Rogue River Valley Nursery Co.

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Growers of Reliable Nursery Stock

BULBS OF ALL KINDS

"WRITE FOR PRICES"

SEEDS OF ALL KINDS

Fruit and Ornamental Trees, Shrubs, Roses, Vines, Palms, Small Fruits, etc.

Phone 1201

Office 25 West Main Street

Medford, Oregon

On Saturday evening there was a pie-eating competition—of course the eaters were all boys. Their hands were tied behind their backs and the pies placed on the table, and the boy who ate his pie first was declared the champion eater.

These different contests brought a great many people every evening who otherwise might not have come.

On Sunday, the last day, there was a sacred concert and a talk by the writer on Hood River methods of packing and associations. Various other lectures were given by prominent men in entomology and horticulture.

On the way back, stops were made at Santa Cruz, with its splendid casino and beach, San Jose and San Francisco. It is wonderful to see how San Francisco has been rebuilt. The lower section was practically destroyed several years ago, but a person looking at it now would never think there had ever been a fire there.

◆ ◆ ◆

AMERICAN exporters of apples might find it to their advantage to procure commission agents in Leeds to represent them.

The apples sold in this market are mostly procured from Liverpool. The custom is to sell them there by auction, and the dealers either make the journey or have brokers make their purchases. This involves auctioneers' commissions, freight charges from Liverpool to Leeds, and the traveling expenses of the purchasers; in the end it all must come off the exporter in the way of less returns for his products. The exporter, though, has the advantage of having sold his apples and received his money promptly, while with agents he would have to wait for his money and must take the chances of loss by decay and a changing market. He should be able to get through-freight rates into Leeds much lower than the amount of total rate when the journey is broken at Liverpool and a reshipment made, and should be able to make terms with the transportation companies which will warrant his sending through.

The apple season for Eastern United States, Canada, and Nova Scotia begins in November and extends to February. During this season the apples are shipped in barrels, and from 2,000 to 3,000 bushels find their way into the Leeds market. Data are not procurable here showing the proportion of those from the United States.

The shipment from Oregon and other parts of Western United States extends from February to May, and amounts during the season to from 1,200 to 1,500 bushels, mostly put up in boxes of forty pounds weight.

From May to July apples are received from Tasmania and Australia in about the same quantity and condition of packing as our Western fruit. The apples most acceptable are the Baldwin, Greening, King, and Northern Spy.

Commission merchants here charge seven and a half to ten per cent for their services and assume

To the Shrewd Business Man

A commercial orchard is a good income producer while you live, the best real estate agent you ever had when you are ready to sell, and a valuable asset to leave to your widow and orphans when you have reached the end of life's journey.

If an old reliable nursery is of any specific importance to the prospective planter, we kindly ask you to consider with us before buying your trees.

Albany Nurseries

(Inc.)

ALBANY, OREGON

Quality and Quantity Leave no Question as to Quotation

On our complete line of

FRUIT TREES
ORNAMENTAL TREES
AND SHRUBBERY

Salesmen wanted

Capital City Nursery Company
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The Shenandoah Nurseries

*Offer for Fall and Winter Trade
a Complete Assortment of*

IMPORTED FRUIT TREE STOCKS

Mahaleb, Mazzard, Myrobolan and Pear

APPLE SEEDLINGS

American and French Grown. All Grades. Straight or Branched

APPLE GRAFTS

Piece and Whole Root

FINE STOCK OF GRAPES, CURRANTS AND GOOSEBERRIES

Strong, Well Rooted Plants

FOREST TREE SEEDLINGS

Carefully Grown and Graded

LARGE GENERAL STOCK

Send List for Prices

D. S. LAKE, Proprietor

Shenandoah, Iowa

WHEN ARE YOU COMING WEST?

Fortunes are being made now by hundreds on small fruit ranches in the West. If you are interested in the famous fruit section about Hood River, Ashland, Medford and other equally famous sections, send in the attached coupon. It's the soil, climate, and scientific culture that makes Oregon and Washington apples famous.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed is 25 cents, for which please send me three recent numbers about famous fruit sections of the West.

Name.....

BF Address.....

Stranahan & Clark

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Commercial Fertilizers
Land Plaster, Lime
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Better Farming

A John Deere Book



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A Farmer Can
Get It Free

IF interested in farming, get our FREE book called "BETTER FARMING." It tells all about—

Alfalfa	Making Hay
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Corn Crops	Cultivation
Stock Feeding	Cotton Crops
Art of Plowing	Soil Fertility
Boll Weevil	Gasoline Engines
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Hired Help Costs Big Money

Your land is high priced and hired help expensive. There is only one way to make big money—use implements that cut down the cost of your crops. Isn't it true that when you break something on a plow it is nearly always a cast part? Wherever strain comes on a John Deere Plow there you will find steel—tool steel. Take any plow that has had hard work for five years, put it along side of a John Deere which has been in service that long—and see the difference. Then there is no point to cover up poor material. You can see the wear and the defects. The John Deere will be solid, staunch and ready for the hardest job. Then you begin to know that quality counts.

You can take pride in owning a John Deere—the standard plow of the world for two generations.



We will send you the 80-page, illustrated book free if you write and ask for

Package No. 46

Mention the package number sure, then you will get exactly the right stuff.

DEERE & COMPANY, MOLINE, ILL.

Factory Prices Cash or Credit

**"A Kalamazoo
Direct to You"**
TRADE MARK REGISTERED

—“And Gas Stoves Too”

A Word to Independent Buyers—

The secret of getting the most for your money—in all stoves and ranges, including gas stoves and ranges—is in buying **direct from the factory** that puts big standard into materials, expert labor and beat and fuel-saving original designs—cutting out all dealers' and middlemen's profits. That's why **Kalamazoos** save you from \$5 to \$40 on price for stoves and ranges of equal quality sold by dealers. We don't sell to dealers—only direct to the users. All Kalamazoos sent ready to use and handsomely blacked and finished. We are proud to refer you to as many as you wish of over 140,000 satisfied owners of Kalamazoos in over 21,000 towns—probably including many of your own neighbors, or near you. Every one bought Kalamazoos direct from us, safe delivery guaranteed.



FREIGHT PREPAID

— ON 30 DAYS' FREE TRIAL

— ON 360 DAYS' APPROVAL TEST

We even give **credit** now—same as your dealers would—to responsible persons—small payment first and then monthly payments after your free trial, if satisfied. Or your payment back and we take our Kalamazoo back and pay freight both ways. You'd be nothing out at all.

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Spend a cent for a postal and send your name for our Big Free 100 page Kalamazoo Illustrated Book with wholesale factory prices, explaining all, with our \$100,000 bank bond guarantee of satisfaction or money back.

Judge first of values—then order—you be the one to say, if you don't want to keep the Kalamazoo we'll send you.

Ask for Catalogue No. 574

KALAMAZOO STOVE COMPANY
Kalamazoo, Michigan

Over
100
Pages
of Stoves
and Ranges
Shown in Our
Big FREE Catalogue

responsibility for collection. The freight rate from Liverpool to Leeds on apples, including delivery in Leeds, but not including cartage from the ship to railroad in Liverpool, is \$3.65 per ton. The cartage at Liverpool is under the control of the Master Carters' Association, and the rates are not at hand.

The Leeds market is the center for a population in excess of a million people. The American apple stands well in the market, and dealers would be glad to have the opportunity of getting them direct and, if sure of them, could build up a larger trade. There are forty or fifty commission merchants in Leeds handling fruit (a selected list of which may be secured from the Bureau of Manufactures).—Consular and Trade Report, Washington, D. C.

THE pre-cooling of ripe, fresh fruits before shipment in refrigerator cars for long distances has proved so successful that a number of pre-cooling plants are now being erected on the Pacific Coast, some of them of large size. The early commercial failures to obtain the results looked for in pre-cooling experiments were due to imperfect methods. The outside of the fruit only was cooled, leaving the interior heat to promote decay during the transcontinental shipment. Moreover, the warm fruit exudes gases which, if allowed to remain in contact with the fruit, injures the keeping quality.

In the process devised by A. P. Maginnis, of Los Angeles, California, who is now building several large pre-cooling plants, the gases arising from the warm fruit are first extracted by means of a vacuum, and then air, purified by washing it in a spray of brine, dried by passing it over calcium chloride or other moisture-absorbing surfaces, and cooled by passing it over the cold coils of a refrigerating plant, is forced over and about the fruit in the cooling rooms before it is loaded into the cars for shipment. The temperature of the cold air admitted may be as low as fifteen degrees Fahrenheit for an hour or hour and a half if the temperature of the fruit is from eighty degrees to ninety degrees Fahrenheit, as it often is during the summer months in Southern California. For another hour and a half air at about twenty degrees Fahrenheit is admitted, then for three hours more air at a temperature of about

twenty-five degrees, and thereafter air at thirty-two degrees Fahrenheit, until the center of the fruit in the boxes has been reduced in temperature to from thirty-eight to forty-five degrees Fahrenheit for oranges and to forty-five to fifty degrees Fahrenheit for lemons.

In the process referred to the body of the refrigerator car in which the fruit is to be shipped is cooled to at least thirty-eight degrees Fahrenheit before loading. While the pre-cooling of the fruit does not save any of the initial icing, as the bunkers are filled before the car takes its load, it is claimed that at least 33½ per cent of the ice otherwise required for re-icing is saved, and that the pre-cooling results in a saving of all the way from 7 to 30 per cent of decay during transit, which means a saving of from \$100 to \$150 on a carload of oranges at the prices that prevailed in 1906.

Moreover, as was fully explained in the review of the United States Government experiments in pre-cooling, published in the July issue of "Ice and Refrigeration," from 20 to 40 per cent more fruit can be safely carried in the same car, a matter of considerable importance when there is a shortage of refrigerator cars at any particular period.—From "Ice and Refrigeration."

IF YOU WANT TO KNOW MORE ABOUT THE WEST,

Resources, opportunities, life, literature, etc., don't delay, but send the coupon at once. The West of today will astonish you. There is something doing in the empire beyond the Rocky Mountains that will interest you. Get in touch with a live land, where fortunes await the willing.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents. Please send three recent numbers containing information about the West.

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**RHODES DOUBLE CUT
PRUNING SHEAR**

Pat'd June 2, 1903.

RHODES MFG. CO.,
GRAND RAPIDS, MICH.

Dept.
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THE only
pruner
made that cuts
from both sides of
the limb and does not
bruise the bark. Made in
all styles and sizes. We
pay Express charges
on all orders.

Write for
circular and
prices.



Which Wagon Would You Choose

This letter from Guy L. Shaw, of Beards town, Ill., explains these two photographs: "Enclosed find photograph of a Davenport Steel Wagon and an ordinary wooden wagon—exactly how they looked after doing the same work, over the same roads, with the same loads."

Mud does not stick to Davenport wheels—but that's only one of the reasons why you should choose

The Davenport Roller-Bearing Steel Wagon

Roller bearings mean 30% to 50% lighter draft. Guaranteed to carry 5,000 pounds. Gears solid steel, trussed like a bridge. Steel wheels, strong spokes, forged into hubs and hot-riveted to tires. Nothing to shrink, rot or work loose. Oil without removing wheels. One Davenport lasts a lifetime. Don't buy any wagon till you write us. Be sure to ask for Free Package No. 22

Davenport Wagon Co.,
Davenport, Ia.

Package
No. 22



ORCHARDIST SUPPLY HOUSE

FRANZ
HARDWARE CO.

Hood River, Oregon

HEADQUARTERS FOR
**CENTURY
SPRAY PUMPS**
Hose, Nozzles, First-
class Plumbing Supplies
C. F. SUMNER
Successor to Norton & Smith
HOOD RIVER, OREGON

RESOURCES AND OPPORTU- NITIES

There is more doing in the West today in the way of progress and development than in any other section of the United States. If you are interested and want further information about opportunities and resources of a vast new empire, use the coupon.

The Pacific Monthly Company,
Portland, Oregon.

Find enclosed 25 cents, for which please send me three recent numbers containing articles about resources and opportunities in the West.

Name.....

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HOW WENATCHEE'S APPLE CROP WILL BE PACKED

INASMUCH as the buyers and distributors operating in Wenatchee Valley fruit will insist this year that peaches and apples shall be packed by the diagonal, instead of the straight method, and that the peaches or apples contained in the boxes shall be marked by number, instead of tier, on the respective packages, growers are now considering the effect of these suggested regulations.

In the opinion of persons experienced in handling and packing fruit, the proposed rules merely alter the manner of placing the peaches or apples in a box, and do not change the quantity contained in the package. Roy D. Dougherty, of the Wenatchee Produce Company, and Walter Raine, an expert packer, have made a careful study of the subject. They agree that, with the standard box, which is ten and a half inches wide, eleven and a half inches deep and eighteen inches long, inside measurement, no difficulty will be encountered with the diagonal method. They have figured how to dispose of apples ranging in size from thirty-six to the box to 200 to the box.

Their conclusions, in tabulated form, are as follows:

No. apples in box	No. of apples wide, or across box	No. of apples deep, or from top to bottom	No. of apples long, or from end to end
36	3	3	4
48	4	4	3
56	4	4	3 and 4
64	4	4	4
72	4	4	4 and 5
80	4	4	5
88	4	4	5 and 6
96	4	4	6
104	4	4	6 and 7
113	5	5	4 and 5
125	5	5	5
138	5	5	5 and 6
150	5	5	6
163	5	5	6 and 7
175	5	5	7
188	5	5	7 and 8
198	6	6	5 and 6

In the box of thirty-six apples, the pack is quite broken, but there are twelve apples in the tier, or layer.

In the box of forty-eight apples, there are twelve apples in the layer, three in each row.

In the box of fifty-six apples, there are fourteen apples in the layer; this is in the nature of an offset pack.

In the box of sixty-four apples, there are sixteen apples in the layer, four in each row.

In the box of seventy-two apples, there are eighteen apples in the layer; five in the outside row, four in the next, five in the next, and four in the inside row.

In the box of eighty apples, there are twenty apples in the layer, five in each row.

In the box of eighty-eight apples, there are twenty-two apples in the layer, five in the outside row, six in the next, five in the next, and six in the inside row.

In the box of ninety-six apples, there are twenty-four apples in the layer, six in each row.

In the box of 104 apples, there are twenty-six apples in the layer, six in the outside row, seven in the next, six in the next, and seven in the inside row.

In the box of 113 apples, there are twenty-three apples in the first layer, twenty-two in the second, twenty-three in the third, twenty-two in the fourth, and twenty-three in the fifth, or top layer. In packing this size box, the first layer is started with three apples and the second with two apples, and so on, alternately. This pack takes the place of the straight pack of 112 apples to the box.

In the box of 125 apples, there are twenty-five apples in the layer, five in each row.

In the box of 138 apples, there are twenty-eight apples in the first layer, twenty-seven in the second, twenty-eight in the third, twenty-seven in the fourth, and twenty-eight in the fifth, or top layer. In packing this box, the start of each layer is just the same as in the box of 113 apples.

In the box of 150 apples, there are thirty apples in the layer, six in each row.

In the box of 163 apples, there are thirty-three apples in the first layer, thirty-two in the second, thirty-three in the third, thirty-two in the fourth, and thirty-three in the fifth, or top layer. In packing this box, the start of each layer is just the same as in the box of 113 apples or the box of 138 apples.

In the box of 175 apples, there are thirty-five apples in the layer, seven apples in the row.

In the box of 188 apples, there are thirty-three apples in the first layer, thirty-two in the second layer, thirty-three in the third, thirty-two in the fourth, and thirty-three in the fifth, or top layer. In packing this box, the start of each layer is just the same as in the box of 113 apples, the box of 138 apples, or the box of 163 apples.

In the box of 198 apples, there are six tiers of thirty-three apples, packed flat.

It is preferable to pack all apples on their sides, but this is a result that cannot always be achieved,

Seeds

THE KIND YOU CAN'T KEEP IN THE GROUND

They grow, and are true to name.
Write for prices on your wants.

188 Front Street J. J. BUTZER Portland, Oregon

Poultry Supplies, Spray, Spray Materials, Fruit Trees, Etc.

LESS WORK

Drawn by two medium horses.
Will cut 28 b 20 acres or double-
cut 15 acres in a day.

Will move 15,000 tons of earth
one foot in a day.

Runs true in line of draft and keeps the
surface true. All other Disk Harrows
have to run in the half lap.

Has Improved reinforced main frame, and
improved standards.

Don't be deceived by poor imita-
tions or infringements.

There's only one original "Cutaway"
and it's Clark's.

Saves time. Saves labor.
Saves money.

CLARK'S CUTAWAY TOOLS

BIG CROPS

Crops increased 25% to 50%.
Better Grain, better Hay, bet-
ter Fruit.

Takes place of Plow and Harrow.
Jointed Pole takes all the weight off the
horses' necks.

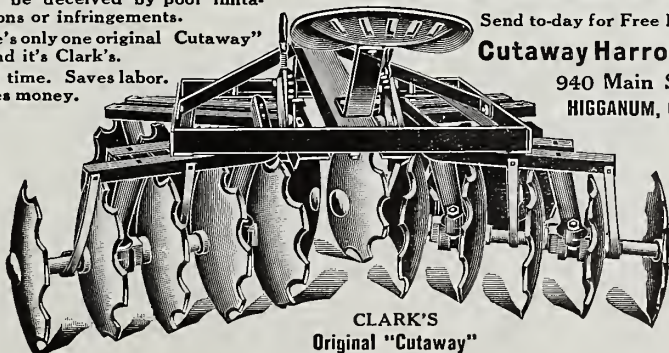
We make 120 sizes and styles of Disk Tools.
Every machine fully warranted.

Thousands in use and giving satisfaction.
If your dealer won't supply you, we will.

Send to-day for Free Booklet.

Cutaway Harrow Co.

940 Main Street
HIGGANUM, CONN.



CLARK'S
Original "Cutaway"

Mitchell, Lewis & Staver Co., Western Agents, Portland, Oregon

The Great Many-Purpose Irrigation Machine

It will cut your drainage ditches;
Stir your soil; Level your land;
Cut laterals; Cut your sage-brush;
Throw up dikes and grade roads;
Pick up dirt—carry it—and drop it
where you want it.

20th Century Grader

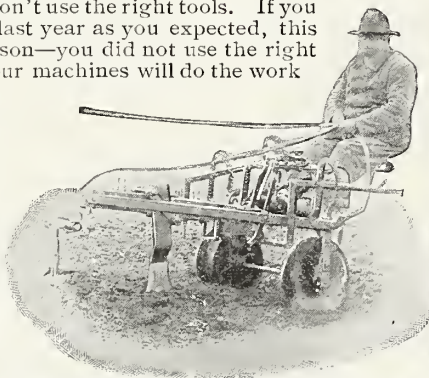
The Original One-Man Machine

The 20th Century weighs but 600 pounds. One man with two or four horses operates it. Turns in 10-foot circle. Does twice the work of the big, heavy grader with four horses with half the effort.

Mr. Fruit Grower—you can't expect big returns from your work if you don't use the right tools. If you did not do as well last year as you expected, this is probably the reason—you did not use the right tools. If one of your machines will do the work of several expensive ones it means bigger profits at the end of the year.

You shouldn't be without a 20th Century Grader on your place for it has a score of uses.

Let us tell you what others say of it. Send postal for detailed information about these wonderful machines.



THE BAKER MANUFACTURING CO., 742 Fisher Bldg., Chicago, Ill.

Austin Drainage Excavator



Digs a ditch with sloping sides and smooth bottom in one operation.

Digs soil containing stones up to the size that will go into the buckets.

Digs a deep ditch at the same unit cost as a shallow ditch.

Digs a ditch that can be lined for irrigation without trimming or shaping up of any sort.

Deposits the soil in even banks, with a wide berm between ditch and spoil bank.

Send for Catalogue "K" describing complete line of Austin Drainage and Irrigation Earthwork Machines

F. C. Austin Drainage Excavator Company
Railway Exchange, Chicago, Illinois

Agents wanted in unoccupied territory

and the packer must exercise his judgment in doing the best he can with the fruit he has at hand, taking care, however, not to place it on end except when absolutely necessary.

In Mr. Raine's opinion, the disposal of apples by diagonal packs can be made most conveniently in cases where use is made of a box half an inch or an inch deeper than the standard box. His idea in this regard, though, does not deter him from entertaining the positive belief that in the standard box apples of every size can be packed diagonally.

Buyers and distributors of fruit favor the diagonal method because it does away with one apple resting squarely on another, as in the straight pack. By experience, they have learned that peaches and apples packed in diagonal style carry better in wagons and cars, and reach the consumer in an undamaged condition.—Republic, Wenatchee, Washington.

THE Missouri State Board of Horticulture has just issued bulletin No. 3, entitled "Strawberries." This treatise was written by an experienced grower in the famous strawberry district of Southwest Missouri. There is a full discussion of all the principal points connected with growing

this fruit for the home and for market purposes. For the first time much valuable information is made available, not only concerning the planting and care of strawberries, but the extent of profits that may be expected per acre where grown upon a large scale. These figures have the advantage of having been taken from actual experience. The list of varieties discussed is the fullest and most complete of any to be found in any recent publication, the number described in detail being eighty-two. In short, bulletin No. 3 is a complete guide to strawberry growing. This bulletin may be secured free upon application to W. L. Howard, secretary, Columbia, Missouri.

MODERN SYSTEMS OF DITCH DIGGING.
The excavation of drainage and irrigation ditches by hand labor has become a thing of the past. Today, great machines propelled by steam, gasoline or other power, are plowing their way through the swamps of the East to make wet lands arable, and opening up desert lands of the West for irrigation purposes.

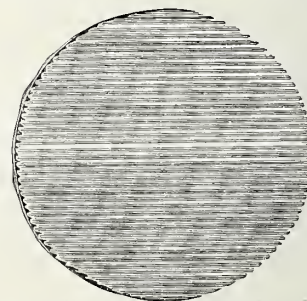
The most notable development in ditching machinery is that made by the F. C. Austin Drainage Excavator Company, of Chicago. Each of the machines manufactured by this company has features that fit it particularly for its work. They have all been tried out on ditches and levees and are working successfully in large numbers. There is something besides mere digging in ditching economics, which is a fact to be remembered in comparing methods of construction. An Austin Drainage Excavator digs the ditch complete with sloping sides, which is not the case with a dredge, and there must, therefore, be added to the cost of dredge work the additional cost of trimming and sloping. When an irregular channel is once created the tendency of flowing water is to increase the irregularity by undermining the banks and forming bars in the channels, thus choking the entire waterway by the deposit of silt. The cost of maintenance of such a ditch will exceed in a short time the original cost of construction. The bottom of the ditch should be true to grade and free from roughness. The sides should be true and smooth and sloped back from the bottom at an angle flat enough to prevent the earth from slipping, falling or caving. The Austin Drainage Excavator does all this, and by delivering the earth at a distance from the edge, insures a berm of practically any desired width, so that the waste banks will never be returned to the ditch by erosion, nor will the banks cave as when torn out by dipper dredges which can deliver the waste banks only immediately adjacent to the ditch.

The Austin Tile Ditcher is another instance of the perfection attained in the replacement of hand

APPLES OR PEARS

Should not be packed, when shipped in barrels, without the use of a

Corrugated Cap

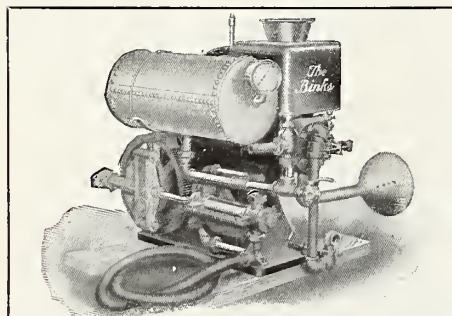


The use of these Caps prevents having bruised or stem-punctured fruit on the face end of the barrel. About two million of these were used last year by the fruit growers and shippers. I can also furnish Corrugated Board for lining boxes, paper linings for boxes, pear and apple wraps, lithographed box labels, in fact, all the supplies used by the fruit growers and shippers.

Samples gladly sent upon request
Send for one of my booklets

G. P. READ

199 Duane Street New York City



Binks Sprayers are Good Sprayers

Light, Compact, Simple and Durable
Illustrated Catalogue free for the asking

PARKER & FISH

Union Block, Seattle

Pacific Coast Distributors for

Binks Spraying Machine Co.

labor by automatic machinery. This is the only machine made that will dig trenches for tile in materials of all kinds. It will dig twelve, fifteen, eighteen and twenty-two inches wide and to a depth of six feet at the rate of 3,000 to 5,000 lineal feet per day. Notable features of this machine are the self-cleaning buckets with manganese steel cutting edges, so arranged that, when necessary, teeth can be attached for hard digging; the automatic tile chute and ditch cleaner combined, which cleans out the ditch and lays the tile at the same operation, so that even if the ditch should cave in directly behind the excavator the chute permits of the tile being laid true to grade; the bottom of the ditch being in cylindrical form, so that when tile is laid it rests in the middle of the ditch and cannot roll from side to side. The whole apparatus can be raised readily

out of the ditch at will by the power screw elevating device, handled by the operator through a lever, which permits of raising and lowering the excavator beam even to the fraction of an inch. Power is supplied by a high-class gasoline engine, or engine and boiler. The caterpillar wheel is of ample size and has shown in actual practice capacity to keep the machine safely on top of ground where a team with an empty wagon would have become hopelessly mired.

Other machines manufactured by the F. C. Austin Drainage Excavator Company may be mentioned, such as the Austin Levee Builder, Austin Drag Line Excavator, the Austin Sewer Excavator, Austin Trenching Machine, for laying water and gas pipe lines—and about any or all of these machines they will, of course, be glad to give full particulars to those interested in land reclamation by drainage or irrigation, or in municipal improvements.

MATHIAS MACHACS, a horticulturist, from Budapest, Hungary, traveling in the United States on a "stipendium" granted him by his Government, is spending several days in Hood River investigating and studying the methods employed there in raising and packing apples. He has visited California and came to Hood River to study apple culture from a scientific standpoint. He visited the packing school in session at the warehouse of the Apple Growers' Union and spent considerable time in the orchards. He was especially interested in the methods used to exterminate orchard pests to result in producing perfect apples. He was high in praising the recently organized Hood River Apple Growers' Fellowship, which maintains an expert in the valley for the purpose of making a scientific research study of the orchard problems peculiar to this valley which come up from time to time. From here Mr. Machacs went to Corvallis to inspect the Oregon Agricultural College and the Government Experiment Station.—Evening Telegram, Portland, Oregon.

MY NEIGHBOR, Richard Smith, and I
For several years or more
Have been buying seeds and poultry needs
Up at the general store.

We had a choice of many kinds
And so we made a test,
Bill bought the cheap and no-name kind
And I bought LILLY'S BEST.

I saw Dick's crop the other day
And there he was all glum,
Cussing weeds and other trash,
His crop was on the bum.

So I began to josh him,
And told him of the crop
That waited me on my old farm,
With kernels fit to pop.

I told him that we paid the same,
And both worked just as hard.
And then began to figure out
To show how he'd been jarred.

And then he got quite grouchy,
So I told him to "take a rest"
And next year do as others did,
Buy good seed—LILLY'S BEST.

THE EDGEMONT LID PRESS

For Apples and Pears

PATENT ALLOWED



Practical and satisfactory. The best on the market. Fruit growers send for our new illustrated booklet describing its operation. Price \$10.00 f.o.b. Hamilton.

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Hood River, Oregon

Headquarters for
FARMING AND ORCHARD

TOOLS

Disc Harrow Extension for
Orchard Cultivation a Specialty
When you want any kind of Orchard
Tools come to me and get the Best

THROUGH THE SOUTH SEAS WITH JACK LONDON

Jack London saw many strange sights in his year's cruise on the "Snark." Not all of us will have the opportunity of making such a voyage, but we can enjoy the enchantment and novelty of such a trip through the descriptions of such an artist as London. The series of travel sketches is running now. Send this coupon and get started right.

The Pacific Monthly Company,
Portland, Oregon.
Enclosed is 25 cents. Send three recent issues containing Jack London's South Sea articles.

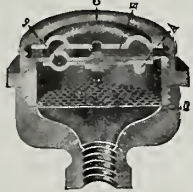
Name.....
BF Address.....

VEHICLES AND AGRICULTURAL IMPLEMENTS

THE BEST OF
ORCHARD AND GARDEN TOOLS
A SPECIALTY

GILBERT - VAUGHAN
IMPLEMENT CO.
HOOD RIVER, OREGON

Get to the Very Center of the Blossom with the great Non-Clog Atomic Nozzle



The great Non-Clog Atomic Nozzle is a perfectly simple, simply perfect nozzle which will not—cannot clog. A test was made by spraying a solution of sawdust.

It is instantly adjustable, even when working, from a mistlike, narrow or wide angle spray to a concentrated stream. This feature makes it the ideal nozzle for orchard or field work. It will throw the solution to the top-most branches of the tree or gently sprays it over the most tender vine.

When used in connection with a 45 degree elbow, the Non-Clog Atomic throws the solution squarely into the center of every blossom—applying it into the calyx—the only successful way to combat the codling moth. It is fitted with four removable discs which give a capacity of 1—2—3 or 4 point Vermorels. It is cast bronze. The discs are galvanized steel or brass as preferred. It has no projections to catch on limbs. We are the largest

Hand and Power Spraying Machine manufacturers in the world. Practically all Government and State Experiment Stations endorse Brown's Auto-Sprays. More than 300,000 in use.

Send for book of 40 styles and sizes of Hand and Traction Power Auto-Sprays. This book contains an article on spraying by Prof. M.V. Slingerland of Cornell University of Agriculture and shows you the right machine for your purpose at the right price.

The E. C. Brown Co., Rochester, N.Y.
Pacific Coast Trade Supplied by
Chas. H. Lilly Company, Seattle, Wash.

Cupid Flour

Has same standing in the Flour trade that Hood River Apples have in the Fruit trade.

MADE BY

HOOD RIVER
MILLING CO.

Burpee's Seeds that Grow

140 VARIETIES ANY QUANTITY

Plenty of stock in our 40,000 pounds
Growing Plants as season requires

All makes high grade
Pruning Tools
Garden Tools
Hose and Spray Nozzles
International Stock and Poultry Food
International Remedies
Incubators and Brooders
Everything for Building
Everything for Furnishing

Stewart Hardware & Furniture Co.
22,000 feet floor space Hood River, Oregon

Increase Your Profits!

By
Using

FANCY LABELS

on Your
Fruit

WE MAKE ALL KINDS OF LABELS, FOLDING BOXES,
STATIONERY ETC. FOR THE FRUIT GROWER,
SHIPPER AND CANNER.

Write us for Samples and Prices

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The largest commercial magazine in the West

Devoted to upbuilding Oregon and
the Pacific Northwest

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ADDRESS

The Chamber of Commerce Bulletin

DAVID N. MOESSOHN, Publisher

Suite 616 Chamber of Commerce Building
Portland, Oregon

A COUNTRY LIFE HALL

WHAT do you think of the plan and purposes of this community center in the open country? Should vastly more farmers get direct benefit from the experiments and publications of the National Department of Agriculture state experiment stations, as well as from the better methods of farming tried out by other farmers, maybe only a few miles away from their own farms, and should the millions spent annually for all this valuable agricultural information be so largely wasted?

Should these better ways of farming be worth thousands of times more than they now are by being made available to each farmer in his daily business of farming, and where could they be made more available than in a Country Life Hall located in every consolidated school district, the hall to be used for different kinds of meetings and social gatherings, including its use in common by the grange, farmers' unions and other organizations?

Should a Country Life consolidated school district containing 20,000 acres, more or less, of productive farm land, producing a gross income of from \$12.50 to \$50.00 per acre, or a total gross income of from \$250,000 to \$1,000,000 a year, on a total valuation of \$100 an acre or \$2,000,000 for the land, afford a salaried secretary for a Country Life Hall, the hall to be situated near the center of the district, the farthest boundary of which being about three miles?

Should this Country Life Hall secretary keep a record of the different kinds of live stock and farm crops produced in the district, the quantity of each, when and how much of each is ready for the market; the secretary not buying or selling any of these products, but simply keeping a complete record and furnishing the information which would make it easier for all buyers to get in touch with the producers?

Should the Country Life Hall contain a bulletin board carrying daily market quotations of farm products, thereby keeping the farmers in touch with market conditions, as well as files of agricultural papers, so that any farmer in the district could have access to the information contained in all of them?

Should the National Government award prize ribbons or banners, costing only a few cents, to the farmer in each Country Life school district who raises the best corn, the best wheat, the best fruit, the best cattle, the best poultry, and so on, to be awarded by score cards grading the points of excellence, and should this be an inexpensive way of singling out the best farm methods and bringing them to the notice of farm neighbors who could and would adopt them?

Should the Country Life Hall contain a complete description of how each one of the neighborhood prize-winners raised his prize-winning crop, so that every farmer in the district, or every visitor could know how it was done.

Should the Country Life Hall with all this available information at hand result in increasing the gross income from the land of at least five dollars per acre, or an increase of \$100,000 annually for

Paste for Labeling

"PALO ALTO" PASTE POWDER

added to cold water, instantly makes a beautiful smooth, white paste. Ready for immediate use at a cost of ten cents a gallon. No labor. No muss, No spoiled paste.

Paste Specialists

Robinson Chemical Works

349-351 Eighth Street
San Francisco, California

AUTHENTIC INFORMATION

Railway men say the colonist movement westward in 1910 will be unprecedented. Thousands are harkening to the call and fortunes are being made now by the early arrivals. New railroads are opening up vast, almost limitless new territory. Let us tell you about it. Send 25 cents in stamps for information.

The Pacific Monthly Company,
Portland, Oregon.

Enclosed find 25 cents for three recent numbers containing articles relative to land conditions in the West.

Name.....

BF Address.....

ACID BLAST ETCHED PLATES

We have installed the only etching machines in the State of Oregon

BLAST ETCHED cuts have a "Printing Quality" which has never before been obtainable with process engraved plates. They Cost the Same as the Other Kind

WE MAKE THE CUTS
FOR BETTER FRUIT

Hicks-Chatten
Engraving Co.

INCORPORATED

OUR NEW LOCATION IS THE SIXTH FLOOR OF THE
BLAKE-McFALL BUILDING
Fourth and Ankeny Streets, PORTLAND, OREGON

J. W. Baltes & Company invite your inquiries for Printing

SPECIALISTS IN THE ARRANGING
AND EXPEDITING OF FINE WORK

Corner of First and Oak Streets Portland, Oregon

the consolidated Country Life school district of 20,000 acres?

Should the Country Life school plant be built in co-operation with the National Government, the state government, the county and the community, and consist of at least ten acres of land, its site being one of the best in the central part of the district, and include a teachers' cottage, community hall, athletic grounds, play grounds, picnic grove, school garden, propagating plats and other features—a community center in the open country?

Should this Country Life Hall be owned by the community just the same as the public school, not by any private individual or corporation, and should it be founded on the lines of the Carnegie Libraries, the Government taking the part of Carnegie?

Should this Country Life Hall, containing the information above outlined, furnish the ideal basis for re-directing the teaching in the schools, introducing agriculture and domestic science along the most profitable lines?

Continuing its work of fostering and encouraging agricultural development, the Spokane Chamber of Commerce has taken an active part in the forward movement inaugurated by the National Country Life Commission, and at the request of a large and representative Country Life conference held

in conjunction with the National Apple Show last year, has published the report of the Country Life Commission for free distribution; has appointed a Country Life committee as one of its standing committees, and in connection with the State Country Life Commission, has formulated a plan for the Country Life School.

The committee is, moreover, working with the State Country Life Commissions of Washington, Oregon, Idaho and Montana, according to plans formed at last year's Country Life conference in Spokane, and our readers are requested to answer the above questions, by letter, to the Country Life Committee, Chamber of Commerce, Spokane, Washington.

◆ ◆ ◆

Cleveland, Ohio, September 30, 1910.

Editor Better Fruit:

Please send "Better Fruit," beginning with the September number, to The Elinor Orchard, Afton, Virginia. It seems to me that any intelligent person can take your packing number and instruct himself in the art of packing. I wish every member of the Virginia Horticultural Society, and the membership is over one thousand, would read your publication.

Yours very truly,

Yours very truly,

C. A. Langston.

SOME varieties of vegetables for home garden that the editor has found very fine quality:

Beans—Burpee's Stringless Green Pod, 1000 to 1, Brittle Wax, Bush Lima.

Beets—Detroit Dark Red, Eclipse.

Cabbage—Succession, Surehead.

Carrots—Early Short Horn, Saint Valery.

Cauliflower—Early Dwarf Erfurt, Algiers.

Corn—Golden Bantam, Cory, Cosmopolitan, Country Gentlemen.

Cucumber—London Long Green.

Egg Plant—Black Beauty.

Kale—Dwarf German.

Kohl Rabi—Early White Vienna.

Lettuce—May King, Deacon, Black Seeded Simpson, Brittle Ice.

Melons—Extra Early Hackensack, Petosky or Early Rose.

Watermelons—Kleckley Sweets.

Peas—Thos. Laxton, Improved Stratagem, Premium Gem (planted this year). Gradus, American Wonder, Nott's Excelsior, Champion of England.

Peppers—Ruby King, Neapolitan.

Pumpkins—Golden Oblong.

Spinach—Long Season.

Squash—Early White Bush, True Hubbard.

National Irrigation Journal

GOLDEN OPPORTUNITIES IN THE GOLDEN WEST

Edited by Clyde A. Morrison

The leading publication of its kind in the world for the investor, home-seeker, farmer, irrigation companies and agents. Covers the entire subject. Printed on the best grade of paper, with highly embellished cover printed in gold and colors, and a three-color process picture every month illustrative of successful irrigation. Special articles by authorities on irrigation.

Published Monthly. One Dollar a Year

NATIONAL IRRIGATION JOURNAL

First National Bank Building, Chicago

Third Annual National Apple Show

SPOKANE, WASHINGTON

Will be Held November 14 to 19, 1910

\$20,000 IN PREMIUMS

The greatest variety of prizes, cups and trophies ever offered. Prizes for single apples, boxes and everything up to full carloads will be awarded

\$1,000 CHAMPIONSHIP CARLOAD PRIZE

For the best carload of 630 boxes or bushels. A floor space of three and one-half acres required to house this great show. Besides the exhibit of apples, apple growers, packers and cookers will learn and gain valuable information

AMPLE HOTEL ACCOMMODATIONS WITHOUT RAISE IN PRICE WILL BE PROVIDED

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WILL HAVE IN EFFECT LOW ROUND-TRIP FARES FROM ALL POINTS ON ITS LINES

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HOOD RIVER, OREGON

FRUIT

Western
Soft Pine.
Light, strong
and durable.

"Better Fruit"
subscribers
demand the
"Better Box."

BOXES

CAN MAKE TWO CARLOADS DAILY

WASHINGTON MILL CO.

Wholesale Manufacturers

Spokane, Washington

WITH reference to our general report for the coming apple season, we beg to call the special attention of the Western states, like Oregon, Washington, Idaho, Colorado, etc., to the Hamburg market.

Only a short time ago we had the pleasure of receiving the visit of one of the leading authorities in agriculture of the Colorado district, Mr. Eugene H. Grubb, which gentleman has been kind enough to give us some very valuable information re the state of crops and other details in the above-mentioned districts. We have already since a number of years been in touch with Colorado, etc., and with the principal growers and grower-societies, but we readily understand that crops of apples were not sufficiently developed then to induce the growers to export apples direct to Europe, as important New York concerns bought up the whole crops at satisfactory prices, and kept the fruit in cold storage, disposing of them gradually from autumn to spring. A good many of these apples were sent to European markets and generally obtained very satisfactory prices.

The apples which are most popular here are Winesaps, Jonathans, Rome Beauties, etc. However, we are sure there are other kinds of fancy apples which would be liked here as well, on account of the perfect quality and flavor all the apples grown in the Rocky Mountain districts are characterized with. We believe the moment has come now for those districts which grow these splendid apples to look for a new outlet, as we understand the enormous plantations there are now in full production, or will be so very soon, and it will be a matter of the greatest importance to the growers to find markets like Hamburg where important quantities of such fine fruit can find a good and ready sale, particularly as our market is in a very favorable position, being the center of North or Middle Europe, for the general fruit trade. We do not sell here only for local consumption, but large quantities are distributed from Hamburg all over Germany, Austria, Scandinavia, Russia, etc.

Hamburg is an enormous market for the sale of American, Australian, and Tasmanian apples, for Spanish and Italian oranges, lemons and grapes, and lately the import of Canary bananas has increased so much that we receive as much or more than Liverpool or London now. For all these reasons, and on account of the splendid accommodations for discharging and storing fruit, it is almost certain that within a very short time we will be able to build up a grand market for fancy apples in boxes as well, from the above-mentioned districts, if our friends on the other side will assist us with regular supplies.

The shipments can easily be made via New York, where are several steamers weekly running to Hamburg of the Hamburg-American Line and the North-German-Lloyd.

As the apples from the Eastern states of America, as well as from Canada and Nova Scotia, which arrive here packed in barrels, principally Baldwins, Ben Davis, Russetts, Kings, etc., are always finding a ready sale if of good quality and

**BOXES
BOXES
BOXES**

APPLE AND PEAR

Stanley-Smith Lumber Co.
Hood River, Oregon

FRUIT BOXES

"Larch" Apple Boxes and
Strawberry Crates our specialty

BUILDING MATERIAL

We carry a complete line. Lumber, Shingles, Lath, Plaster, Cement, Lime, Sash and Doors, Brick, Roofing, Building Paper, etc.

We solicit your patronage

Bridal Veil Lumbering Co.
Hood River, Oregon

"APPLE"

"The King of the Land of Fortune"

All About the Apple and the Valleys Where it Grows

Here is a book worth money to you. It will tell you of the profits to be made in apple growing in the Northwest. It is full of facts, figures and pictures. It is a valuable book to get and a pretty book to keep. It will be mailed to any address upon receipt of four cents in stamps. Just say you are interested in fruit culture and want to learn what the Northern Pacific country has to offer. Write to either one of these:

A. D. CHARLTON, Ass't Gen'l Pass'r Agent, 255 Morrison St., Portland, Oregon

L. J. BRICKER, General Immigration Agent, St. Paul, Minnesota

A. M. CLELAND, General Passenger Agent, St. Paul, Minnesota

Northern Pacific Railway

THE SCENIC HIGHWAY THROUGH THE LAND OF FORTUNE

condition, we would advise our friends in the Western states to make a trial with limited shipments of apples packed in barrels, to compare by the result which packing is more profitable for them, boxes or barrels.

Shipments should not commence before the apples are well colored, and not earlier than the middle of November, because the fancy trade in Hamburg does not commence before December, when buyers start to purchase for Christmas and New Years. After December, the demand of the fancy trade increases gradually because the apples from the Eastern states packed in barrels arrive partly in perishable condition, and then buyers prefer only the very best stock packed in boxes, because they keep better. The biggest demand for fancy box-apples we expect in February, March and April, especially because then most of the Eastern states apples in barrels do not arrive sound, and quantities get very much reduced, while we are convinced the Colorado, etc., apples can reach us in perfect condition out of cold storage in New York and will command the market for the better trade.

Quantities to Ship—To start with, we would not advise to ship more than 1,000 boxes weekly, which we hope to place at fancy prices. The question is to know how much our shippers require us to make for their apples per box, because it can readily be seen that if we can sell them here at a reasonable price, we can place much larger quantities than if we are to make fancy prices. Therefore, we request our friends to give us an idea when making shipments, of the approximate cost-price, and you can be convinced that we shall do our best to get as much as possible beyond. After a few shipments have been made regularly we can give our friends a better idea, and we are convinced that very shortly our market will be able to take about 5,000 boxes weekly till January, and about 10,000 boxes weekly from February to April.

What we would like to know is, whether our friends would be able to guarantee us regular supplies, so that we can make the necessary propaganda to get our numerous clients interested into this trade. Our bankers are the "Vereinsbank in Hamburg," and for any further references please apply to any European or New York fruit firm.—J. H. Lutten & Son, Hamburg, Germany.

◆ ◆ ◆

AN ORCHARDIST at Casnmere, Washington, Mr. E. P. Groves, has several trees growing apples so large that but twenty-seven can be packed in one box. The apples are known as the Black Ben Davis and are fully five inches in diameter. He has contracted every one of the apples at a figure approximately twenty-five cents each. Out of his orchard he picked five red apples

that fill a half bushel basket and ten of them a common apple box. These apples are growing on three-year-old trees, about fifty apples to a tree. These are believed to be the largest apples grown in the Northwest this year.—St. Louis Republic, October 17.

◆ ◆ ◆

AN attractive 120-page book, "Spraying a Profitable Investment," published by the Sherwin-Williams Co., Cleveland, O., makers of insecticides and fungicides. It is full of information which will not only be of value to the large growers but which is especially valuable to the small grower who has a few fruit trees or a little garden and vegetable plot.

The book is fully illustrated throughout with cuts taken from government and state experiment station bulletins, and shows reproductions of the more important insects and fungus diseases, together with the damage inflicted by these pests. It is arranged according to the various fruits, treating of the various insects and fungus diseases which effect that particular fruit, with cross reference where the same insect or pest attacks other fruits.

Under the heading of each insect a description is given of the insect itself and of the damage which it does, and this is followed by the remedy, advising what spray to use and what dilution.

Chapters are also devoted to the spraying of greenhouse plants, shade trees, tobacco, cotton and pecan trees. At the back of the book is given a complete table for spraying, giving the character of the pest, what spray to use, dilution, and what time to make the application.

We would especially recommend reading the chapter "Spraying for the Home Orchard and Garden," on page 105. This book will be sent free by the Sherwin-Williams Company to anybody who writes for a copy. It is well worth availing yourself of this opportunity, because it tells in clear and concise form the tremendous advantages which can be secured through spraying and how you can not only increase the size of your crop but the character of fruit as well, as spraying at the right time will prevent all danger of insect damage and wormy fruit.

Every grower, big or small, should have one of these books, "Spraying a Profitable Investment." It is put up in handy form and can be slipped in the outside pocket of your coat ready for reference. You had better get one now so that you can read all about the various insect pests during the long winter months when you are not very busy. This will enable you to be prepared to guard against all insect and fungus trouble next spring.



The Apple Growers

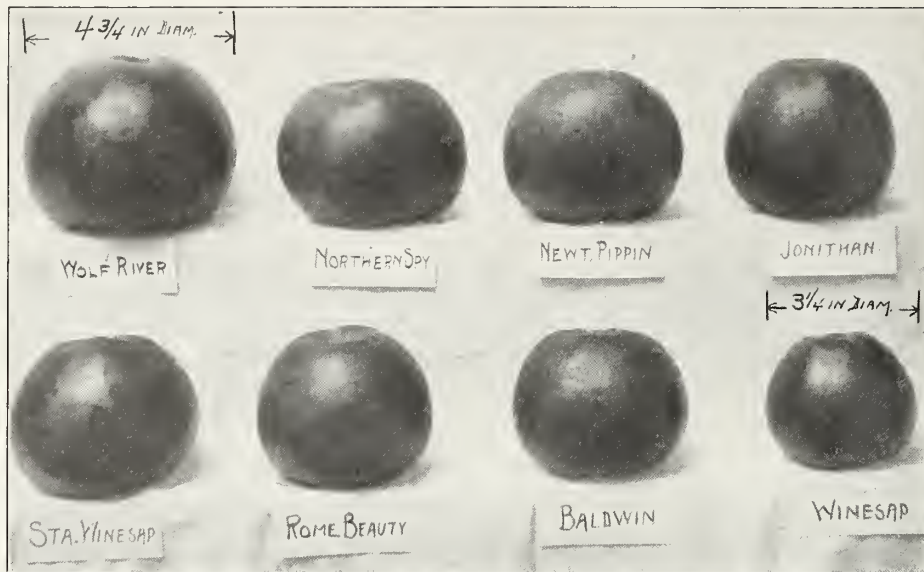
Make their headquarters at

Mt. Hood Hotel

Hood River, Oregon

PICTURESQUE LOCATION
OVERLOOKING THE
COLUMBIA

Moseley & Larsen, Props.



WE HAVE SHOWN you many views of our nursery and many cuts of our trees.

We now show you a photo of a group of apples picked from trees grown and sold by the Washington Nursery Company. These were carried in a basket on a 500-mile boat, wagon and rail trip and photographed a week after picking, but the size and shape is all that could be desired. The scale indicated is exactly correct, as the apples were calipered. A color photo would have added the final touch, but color photos come high.

We simply want to impress you with the fact that we grow and deliver the best trees that skill can produce or money can buy. The nursery business is our pride. That's our sole occupation. It absorbs all our time and attention. It's no side line with us. When we sell you a tree, it's up to us to stand back of it, and you'll always know where to find us.

That's worth considering in these days when every man who can buy and sell or grow a few trees between the tree rows is a "nurseryman."

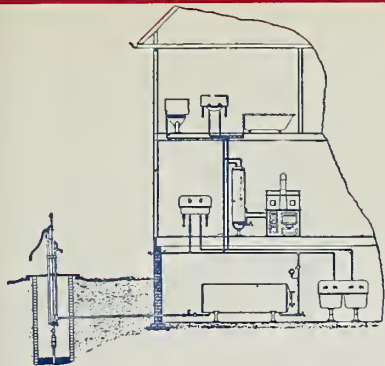
In this lower cut we show a view in a part of our apple block taken September 1, 1910. There were planted in our nursery in March, 1910, 4,265,000 apple grafts, all as "good and true" as are the trees which bore the apples shown above.



WASHINGTON NURSERY COMPANY

AGENTS EVERYWHERE, MORE WANTED

TOPPENISH, WASHINGTON



Why not enjoy the most desirable of city conveniences?

Water Supply Under Pressure

YOU NEED A

Leader Water System

IN YOUR HOME

No doubt you have often envied your city friends and wished for the conveniences afforded by modern water supply under pressure, in **your** home. The **Leader Water System** will enable you to enjoy these advantages more thoroughly than is possible with any other system. The **Leader** is not an ordinary farm water supply system, with its attending troubles and annoyances; it is far from ordinary. It will furnish a dependable supply of water wherever and whenever you desire it. You can enjoy modern home conveniences, such as the bath, toilet, etc. You will have plenty of water for all domestic purposes, the laundry, sprinkling and **PROTECTION AGAINST FIRE**, that danger which constantly menaces the rural home. Pressure up to 125 pounds may be maintained with **The Leader System**. As is shown in the illustration, the tank may be placed in the basement (more often it is placed underground), where it keeps the water cool and fresh in summer and prevents freezing in winter. The beauty of **The Leader System** is that it is practically troubleless. With the exception of a few moments when water or pressure become low, it needs no attention. **But for the fact that every time you have occasion to call on its services you are reminded of its efficiency, you would forget that you had such a thing as an independent water supply.** We will be glad to give you an estimate on a system that will meet your requirements. Use the coupon.

USE THE SLIP AND GET OUR FREE BOOK, "QUESTION OF WATER"

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Send me your book, "Question of Water."

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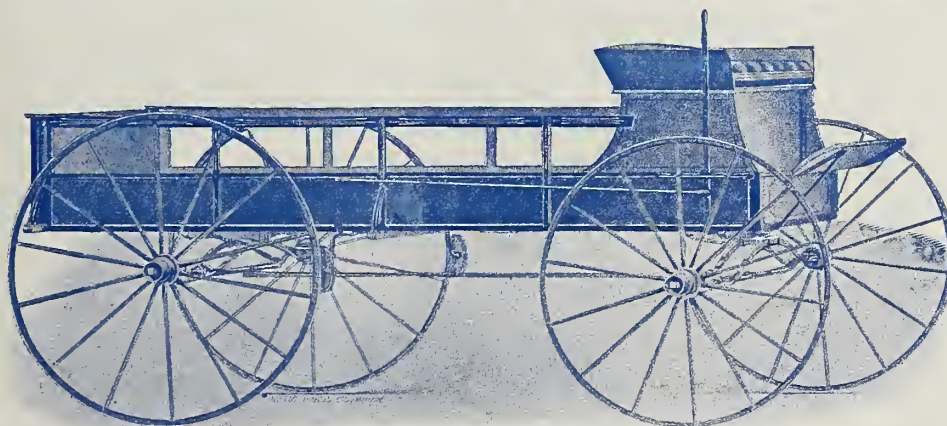
WHOLESALE AND RETAIL DEALERS IN

Vehicles and Implements

Carry large assortment of best styles of earth-working tools; also haying and harvesting machinery; also wagons for fruit delivery and for teaming; also driving vehicles for business and for pleasure uses.

WE RECOMMEND TO FRUIT GROWERS THIS WAGON NO. 120
MADE BY FREMONT CARRIAGE MANUFACTURING COMPANY

Bodies
42 inches
wide.
Have drop
end gate
with chains.
Hang low
on duplex
springs.



Uses the
celebrated
"Fitch Gear"
"Short Turn"
with
high wheels,
wide body
hung low.

Sizes: 1 1/8-inch, 1 1/4-inch, 1 3/8-inch and 1 1/2-inch axles. Bodies: 7-foot, 8-foot, 9-foot, 10-foot; 42 inches wide

THE NAME OF MAKERS IS GUARANTEE OF HIGHEST QUALITY

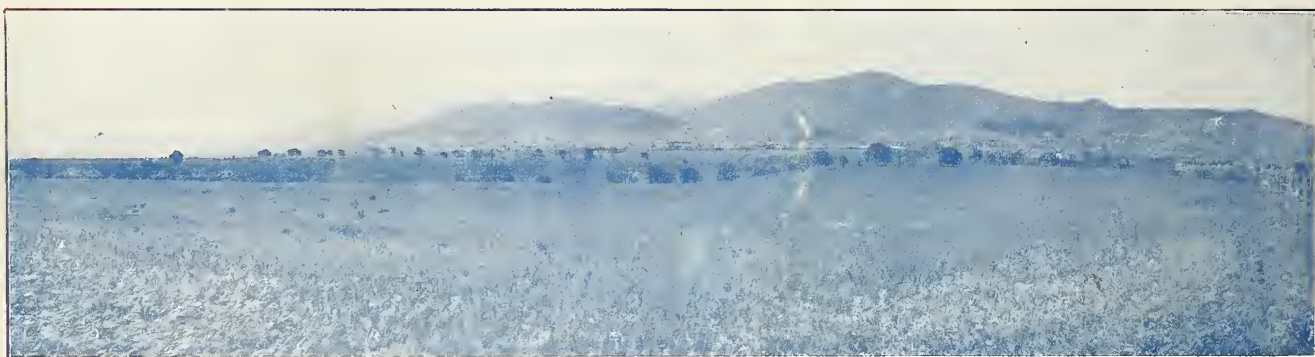
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